

Facilitating Global Leadership Competencies of Tenured Faculty Members to Offer International Engineering Programs

Thanikachalam Vedhathiri^{1*} and S. Anita²

¹*Former Professor and Head of the Department- Center for International Affairs, National Institute of Technical Teachers Training and Research (Southern Region) Chennai, India*

²*Associate Professor, Department of Electrical and Electronics, RMK Engineering College, Chennai, India*

¹*vthani2025@gmail.com, ²sanitae@yaho.com*

Abstract

In the twenty-first century, almost all countries depend on each other. Well-developed nations depend on foreign graduates to fill roles in design, research, product development, manufacturing, and maintenance. Many fast-developing nations in Asia need to strengthen their higher education institutions to train outstanding graduates to pursue research and development work. Unless they focus on offering needed diverse global faculty development programs and the capacity to undertake sponsored research projects, these fast-growing nations will plan to establish new companies in foreign countries. Hence, this research focuses on assessing the needs of various countries, training faculty members to bid for consultancy projects with international development agencies, establishing campuses in various countries, and providing graduates with the necessary skills and attributes. The Indian National Education Policy 2020 suggests that Indian higher education institutes develop diverse global faculty development programs and undertake consultancy projects under multinational companies (MNCs) and international development agencies (IDAs). Technical Teachers Training Institute (TTTI, now NITTTR), Chennai, pioneered this area and has been successful in this field since 1980. Based on this model, this paper proposes a five-stage process for training and developing tenured faculty members, improving the institute's resources, and securing government support. It is expected that most national institutes and institutes of national importance will launch additional overseas institutes in Asia and Africa. This approach can be refined by various countries that plan to offer diverse global faculty development programs and undertake consultancy projects under IDAs and MNCs.

Keywords: *Tenured faculty, Facilitation, Competencies of faculty members, Global leadership*

1. Introduction

Nalanda University was founded in 427 CE and is considered the world's first residential Indian university, a sort of medieval Ivy League institution home to 9 million books that

Article history:

Received (March 1, 2026), Review Result (April 8, 2026), Accepted (May 12, 2026)

*corresponding author

¹ORCID: 0000-0002-5902-0319

attracted 10,000 students from across Eastern and Central Asia. They joined this university to study medicine, logic, mathematics, and Buddhist principles from some of the revered scholars during the more than seven centuries that Nalanda flourished. The monastic university predates the University of Oxford and Europe's oldest university, Bologna, by more than 500 years. (BBC,57). Well-known American and British universities have offered programs for international students. The last twenty-five years have witnessed the emergence of the International Branch Campus (IBC) as a means of providing Transnational Higher Education (TNE) (Rob Hickey and Dan Davies, 2022). Important trends in Higher Education Internationalization and Innovation are International Branch Campuses (IBC), International Universities, joint degrees, and online and blended learning programs, including Massive Open Online Courses (MOOCs) (Jose Manuel Martinez Sierra and Jean Monet, 2015).

The National Institute of Technical Teachers Training and Research, Chennai [formerly known as Technical Teachers Training Institute] [48] was established in 1964, and the British Council assisted the faculty through Huddersfield College of Education. Later, this institute became an associated institute of UNESCO's Asia-Pacific Educational Innovation for Development in 1978 and of the Colombo Plan Staff College for Human Resources Development in 1977. This institute has offered a diverse set of global faculty development since 1982. There are about 3,500 alums in 150 countries worldwide. The Indian Institute of Technology (IIT) Madras received assistance from Germany; IIT Delhi from the United Kingdom; IIT Kanpur from the USA; and IIT Bombay from the USSR. Birla Institute of Technology, Pilani, received assistance from the USA. Many American Universities established their overseas campuses in the Middle East in the late 1990s, and many Australian Universities established their overseas campuses in Malaysia. Globalization of engineering education brought the exchange of ideas, scholarly rigor and excellence, and quality education.

In the 21st century, most fast-developing nations compete with well-developed nations in analysis, design, prototyping, and refining, manufacturing, quality planning, developing cost-effective and energy-efficient components, marketing them globally, maintaining them, scrapping old products, and planning efficient and innovative products. All are due to the establishment of national and state technical universities, institutes of national importance, institutes of information technology, institutes of management, institutes of production, institutes of science education, etc. All these institutes have established research parks to facilitate the design of innovative products in collaboration with multinational companies. The high-performing faculty members have established highly effective continuing education centers, centers of excellence, and multidisciplinary research and development centers with a global focus. Due to the globalization of national economies, many foreign development organizations have invested substantially in Greenfield manufacturing to produce cost-effective products for global markets. They employ graduates of these institutes for analysis, design, and development of innovative products, manufacturing, and maintaining them. Most of the outstanding faculty members have excelled in advanced research, developed intellectual products, and obtained global patents. Over the past 10 years, around 1 million Indian graduate students have migrated to overseas universities to pursue postgraduate and doctoral programs. In the 21st century, the Indian Government has focused on attracting international students to Indian institutions. It has also facilitated the establishment of overseas institutions in many developing countries in Africa and Asia. Many outstanding faculty members have undertaken sponsored research projects under many International Development Agencies. Only a few institutes have offered diverse global faculty development programs funded by various schemes of the Ministry of External Affairs and the

Ministry of Finance. To expand such diverse global faculty development programs and to offer consultancy projects to various Multinational Corporations (MNCs), these institutes need to develop a strategic plan. The tenured faculty members need training to offer diverse global faculty development programs and consultancy projects to MNCs. This research paper focuses on these areas. Many advanced countries have offered diverse global faculty development programs and have benefited their economies. It is beneficial to offer development programs to encourage much industrial collaboration. When multinational companies establish production centers, they attract qualified engineers, thereby minimizing manufacturing costs. Diversity brings more innovation in design and production. Millions of Indian students migrated to the USA, the UK, Canada, Australia, and Germany, earning higher qualifications and contributing to the growth of technology and industry in all these countries. Fast-developing countries in Asia have to focus on the globalization of higher education and the creation of human and knowledge capital.

The need for Establishing Branch Campuses in Overseas Countries arises to utilize the skills and abilities of outstanding faculty members, to get a global ranking of the institution, to create well-trained graduates to support multinational companies, to support the growth of companies established in the host countries, to improve the trade, to supplement the growth of researchers to form consortium, and to support the market of global sales of instructional packages [57][58][59]. Fast-developing countries have to focus on the availability of rare raw materials for manufacturing and marketing finished products. Further, this initiative establishes Engineers Without Borders and provides access to well-trained engineers, scientists, managers, and computer scientists, thereby achieving a broader global reach.

At present, only a few senior faculty members have a global focus, which they acquired during their studies in foreign universities, and are involved in various sponsored global projects. A few institutions have been upgraded to associated institutions to provide local services to many international development agencies. Because they offer many globally focused programs, they are exposed to the needs of other countries. Branch campuses demand faculty members who can lead local faculty members and students to global challenges. Many fast-developing countries in Asia can facilitate their tenured faculty members becoming global leaders and enable well-performing institutions to establish global campuses in Asia, Africa, Europe, and South America.

2. Statement of the problem

"The need for incorporating global programs and consultancy centers at national institutes of technology and institutes of national importance, state technical universities, deemed to be universities, and autonomous institutes is to be researched. The faculty members of national institutes, Indian institutes, state technical universities, deemed universities, and autonomous institutes need sufficient resources and funds, and the development of diverse faculty members, to institutionalize the art of planning and developing the centers needed to deliver global programs and undertake complex consultancy programs. Besides these, they should have a global focus and vision to excel and be ready to offer diverse global faculty development programs funded by various agencies. Further, the Government has to facilitate global programs to facilitate engineering education without borders. Fast-growing countries need to establish branch campuses in other countries under a bilateral agreement."

3. Objectives

1. To assess the needs of other developing countries to establish technical teacher training institutes, engineering institutes, and management institutions.
2. To formulate strategic plans to establish global programs in various engineering institutes in India.
3. To train and develop the tenured faculty members in planning and implementing global programs.
4. To market these programs efficiently and get a sufficient number of global participants.
5. To plan and establish overseas campuses in various countries through the needed collaboration of client countries

3.1. Research methodology

Case Study Approach: The performance of an institute over sixty years has been observed and evaluated. In this case, the Technical Teachers Training Institute (TTTI), Chennai, India, has been closely observed, and its academic growth has been evaluated against that of several similar institutes in India. It is assumed that the outstanding faculty members have contributed to the institute's success, even though their areas of development are not mandatory. Initially, this institute was established as a faculty development institute to improve the performance of Polytechnic Colleges in India. Because of its outstanding contributions to curriculum evaluation and development and its offering of diverse global faculty development programs under various funding agencies, it became an associated institute of UNESCO's Asian Center for Educational Innovations for Development, Bangkok, Thailand, and the Colombo Plan Staff College for Technician Education, Manila, the Philippines. This has become a model for further investigation. Most of the outstanding faculty teams voluntarily offered diverse global programs that were approved and facilitated by various ministries of the Government of India. The growth of this institute has been assessed using the case study approach.

4. Literature survey

Hall, Zhu, and Yan [19] state that a few attempts have been made to lay the foundation for developing individuals into global leaders. Smith and Peterson [51] stated that very little has been looked into what it takes to develop a "global leader". Sloan, Hazucha, and Van Katwyk [35] asserted that global leadership development should be part of the strategic plan of any organization that wants to flourish in the global market. Black and Mendenhall [14] stated that leadership is extremely important for organizational success in this globalized economy. Robinson and Harvey [52] stated that, in an increasingly global environment, leaders face many complex challenges, and what many researchers know about leadership theory and development may no longer be effective in this context. Jonna Story (2011)[23] stated that global leadership development has received increased attention from practitioners and researchers in recent years. Drawing on the literature on global mindset, constructive development, and instructional sensitivity, he proposed a model for developing global leaders [11][12][16][17][18][19][21]. According to her, developmental activities are challenging for most individuals; she proposed that training domestic leaders to develop psychological capital will facilitate their growth into global leaders. She developed a three-step model to become a global leader. According to her, leaders need to develop a global mindset, develop a self-authored identity, and develop an adaptive worldview. According to Levy, Beechler, Taylor, and Boyacigiller [26], a global mindset describes skills, attitudes, competencies, behaviors,

strategies, and practices. A global mindset is necessary to be an effective leader in the global environment. Trade in educational services is increasingly significant internationally in the present scenario. Laura Engel, Heidi Gibson, and Kayla Gatalica [25] in the global education context learned four lessons: i) The Power of the Champion, ii) Leveraging Partnerships, iii) Developing and Telling the Story, iv) Building a Network. In LinkedIn, a seven-step model for designing and delivering effective global leadership development has been discussed. The model consists of: 1. Defining the objectives and outcomes, 2. Assessing the participants' needs and preferences, 3. Selecting the appropriate content and methods, 4. Designing the structure and schedule, 5. Implementing the programs and monitoring the progress, 6. Evaluating the program and follow-up, and 7. sharing the personal experience. However, a few nations have developed advanced programs for their faculty members to establish global programs. The World Trade Organization brought many models to improve global programs [11].

The process of globalization in higher education has now received a significant boost with the emergence of the General Agreement on Trade in Services (GATS) regime [7][8][9][10]. Education is identified as one of the 12 main services that must be opened to the free flow of trade between countries. The University Grants Commission (UGC), India's premier policy-making and regulatory body for state-funded higher education, has responded positively to globalization. Indian higher education already has strong brand value abroad, as evidenced by the ongoing demand for qualified professionals educated in India in engineering, medicine, computer science, biotechnology, and related fields.

4.1. Initiatives for globalization of Indian engineering education

Engineering education is driven by innovation. Innovation is incubated in reputed engineering institutions. The General Agreement on Trade in Services (GATS) is a multilateral agreement under the World Trade Organization (WTO), with education among the services. India is a signatory to the WT [7][8][9][10]. The modes of supply under GATS are:

1. Mode 1: Cross-Border Delivery (CBD): Programs offered through distance mode
2. Mode 2: Consumption Abroad (CA): Mobility of students to foreign countries for studies
3. Mode 3: Commercial Presence (CP): Establishment of campuses in foreign countries, offering programs through collaborations in foreign countries
4. Mode 4: Movement of Natural Persons (MNP): Exchange of faculty across borders

Activities under Globalization of Higher Education

Table 1. Current Indian practices

No.	Mode	Process	Current Practice
1	1. CA	Admission of international students in Engineering Institutions in India	Non-resident Indian Students are admitted to many engineering universities,
2	2. MNP	Implementing global projects	NITTTR Chennai [49] & Bhopal [48] have their projects under the World Bank's Cement Manufacturers' Association-Danish Association for International Development-Human Resource Development project.
3	3. CP/MNP	Networked programs and projects in India and abroad	Research Projects in cooperation with the best universities abroad
4	CA	Global networked programs	Asian Development Bank program- ADB-NEP-

		and projects of other countries	974 for Nepal, UNDP sponsored project for Bhutan Technical Education, Indian Institute of Technology is implementing engineering programs in Tanzania, IIT Delhi is implementing engineering programs in Nepal, UAE, Egypt, Abu Dhabi, and Saudi Arabia [13]. The University of Madras permits overseas participants to register for part-time Ph.D. programs
5	CBD	Distance Education /Online Programs	Indra Gandhi National Open University (IGNOU) admits international students [60]
6	CP/MNP Projects	Undertaking international projects sponsored by the World Bank, United States Agency for International Development (USAID), United Nations Development Project (UNDP), and Asian Development Bank (ADB)	NITTTR Chennai [49] completed a USAID-funded project on water management in the southern region; UNDP sponsored a project on Technical Education in Bhutan.
7	CP/MNP Faculty Training/Student Programs	Educational services through the Attaches of Indian Missions abroad	NITTTR Chennai and Bhopal are conducting diverse short-term programs for faculty members from other countries under the Ministry of External Affairs (SCAPP and TCS), the Ministry of Finance (ITEC)
8	ABET/Global Accreditation for Indian programs	A large number of graduate programs are accredited under the National Board of Accreditation (NBA)	ABET has approved the National Board of Accreditation

4.2. Inference

Only a handful of institutions have started implementing global programs. One reason is that the Government of India has not permitted global programs. When Singapore invited the Indian Institute of Management, Bangalore, to start an MBA program, the Ministry of HRD didn't permit it. Also, when IIT Delhi planned to start a branch campus in Mauritius, the Ministry didn't permit it. Now, under the National Education Policy 2020, the Government has been permitted to start overseas campuses in Africa, the Middle East, and Nepal. Most of the senior faculty members have their PhD from various overseas universities. In due course, many institutes of national importance and deemed universities would establish new campuses in other countries.

5. Possible rapid growth of new technology programs

The following approaches will enable the rapid expansion of engineering programs to keep pace with the rapid growth of advanced technologies.

1. Creating a post of Chief Learning Officer (CLO) to assess the needs of various overseas countries

Leading multinational companies create Chief Learning Officer (CLO) roles to assess the impact of emerging technologies on global markets. CLO has to study the possible impact of new technology and how it will become a market changer. They have to prepare a detailed information brief and pass it on to the company's CEO for review, to prepare the company to launch new products and stay in the market. Similarly, most global research universities focus on innovative technologies.

2. Creating a post of Chief Knowledge Officer (CKO) to collaborate with various centers of the institute

CKO has to plan to implement new products, train workers, add new equipment, tools, and consumables, and prepare for production. At technical universities, the academic council must explore new technology-based graduate and postgraduate programs. Introduce new interdisciplinary graduate and postgraduate programs. Such innovative efforts help capture the fast-growing market for graduates.

3. Establishing centers for global programs and projects

A few autonomous institutes establish the necessary centers for global programs and projects if they have full academic autonomy, the resources, outstanding faculty members, and an academic culture of innovation. A learning organization continuously provides freedom and empowers the faculty to plan many thought-provoking research projects and seek funds from national funding agencies. This effort has been highly successful in building knowledge and human capital.

4. Needs of developing countries to establish Technical Teacher Training Institutes (TTTI, now NITTTRs) [47][48], engineering colleges, and management programs

Many official teams from various countries have visited TTTI (now NITTTR) Chennai [48] and expressed their needs. This forms only part of the identification of global needs. Participants in various courses have also expressed their country's needs. Many courses have been developed, implemented, evaluated, and improved based on participants' feedback.

Table 2. Training needs of various countries

Country	Technical Teacher Training	Engineering	Management
Singapore	Only the university's education department offers teacher training programs.	The university department offers short-term courses	Desired to develop a management school in collaboration with the Indian Institute of Management, Bangalore
Ethiopia	Technical Teacher Training College in collaboration with TTTIs (now NITTTRs) of India	Desired to establish engineering institutes in collaboration with India	The university offers management courses
Sri Lanka	Training the teachers of Plantation Institutes of Sri Lanka	There is no Technical Teacher Training Institute	Short-term courses in Human Resource Development (HRD)
Somalia	Teacher Training through long-term programs	Do	Do
Mauritius	Short-term teacher training courses: Water Resources, Environmental Engineering, Planning, Technical Education, Electronics, Computer Science, Information Technology	Industrial Training Institutes, Skill Development Institutes	Short-term courses in HRD
Nepal	The university offers teacher training courses for school teachers	Technical Instructors Training Institute (TITI) offers short-term courses	Do
Other countries	Teacher training courses in technical education, vocational education	Establishing engineering colleges	Short-term courses in HRD

5. Developing focused research and training programs

Over the last 50 years, the Government of India has established many funding agencies to support promising university projects. Such R&D programs have yielded numerous new products, which are patented and licensed to companies. As a result, many institutes have

become market leaders and earned substantial income. They have improved their market reputation and Return On Investment (ROI).

6. Bidding for global projects under various International Development Agencies (IDAs), overseas governments, and Multinational Companies (MNCs).

Most leading institutes have encouraged their outstanding faculty members to bid on complex global projects under various IDAs. Many institutes should popularize this process. The Government should grant autonomy to bid for promising projects without a bureaucratic, time-consuming process. The Board of Governors can approve such an innovative development process.

7. Assessing the impact and undertaking remedial measures to improve the programs

There is a need to conduct an academic audit of all completed projects to assess the strengths and weaknesses in project planning and implementation. This will enable them to continuously improve their perception of the project team and its capabilities. Continuous learning is possible. Learning on the job will clarify the project team's assumptions and problem-solving abilities.

8. Assessing the Faculty skills, abilities, and conducting needed development programs to reach global leadership [1][12][14][15][16][17][18][19][20].

First, assess the current status of accredited faculty members, including their existing competencies, desired competencies, development initiatives, and planned outcomes. This is presented in Table 1 below.

9. Training and Developing Tenured Faculty to Plan and Implement Global Programs: Faculty Development Stages:

Five stages were identified as follows: 1. Tenured Assistant Professors, 2. Associate Professor, 3. Professors: 4; Deans: 5. Directors/Vice-Chancellors/ Provosts. Key performing competencies were identified based on programs completed through 2023.

Table 3. Tenured assistant professors: key performing competencies, desired competencies, needed development initiatives, and planned competencies
[1][2][3][4][5][6][16][17][18][19][20][21][36][37][38][39][40][41][42][43][44]

Key Performing Competencies	Desired Competencies	Needed Development Initiatives	Planned Outcomes
Strategic Planning	Identify vision, mission, program objectives, and course outcomes.	Offer in-house development programs.	Capable of preparing a strategic plan.
Create SMART goals	Goals have to meet the fast-growing needs of MNC employers.	Offer in-house workshops.	Capable of creating SMART goals.
Planning Outcome-Oriented Competencies	Planning diverse global faculty development programs.	Expose them to the art of planning and implementing diverse programs.	Capable of planning outcome-oriented competencies in graduate programs.
Planning Interdisciplinary Programs	Planning diverse global-based interdisciplinary programs.	Conduct a workshop on planning interdisciplinary courses and related workshops.	Capable of planning and implementing interdisciplinary graduate programs.
Building Strong Communities	Create linkages with all stakeholders.	Exposure to global stakeholders like MNCs, IDAs, and foreign countries that have signed bilateral linkages.	Willingness to build strong communities around the institute.
Building Supportive Culture	Developing skills to assess the needs of national	Conduct workshops on needs analysis.	Ready to build a supportive culture.

	stakeholders.		
Building Strong Institute Communities	Developing interpersonal skills, working in teams, and providing technical support to staff.	Sharing the project-specific skills, quality, quantity, time, and deadlines.	Ability to build strong internal communities consisting of all departments and centers.
Creating Passion for Outstanding Performance	Focusing on excellence, cooperation, collaboration, and fixing SMART objectives.	Cooperation and collaboration with companies and stakeholders to generate SMART objectives.	Highly motivated for outstanding performance in all academic programs and consultancy projects.
Cultivating Outstanding Leadership Skills [18-21]	Supportive Leadership skills focused on achievement motivation.	Focusing on leadership with equity, integrity, humility, and outstanding culture.	Can cultivate outstanding leadership skills in all programs and projects.
Interdisciplinary Research Projects	To undertake real-life projects.	Assessing the needs of various companies and implementing the necessary improvements through real-world projects.	Ready to undertake interdisciplinary research projects under IDAs.
Interdisciplinary Postgraduate Programs	To meet the challenges of disruptive technologies.	Should be based on the fast-growing industrial product design, testing, and improvement.	Ready to develop an interdisciplinary postgraduate program under an MNC.
Equity [36-44]	Sharing resources with all faculty members without any discrimination.	Never discriminate against the faculty.	Ready to share the project gains as per the service rendered and norms.
Empathy	Providing assistance and support to fellow members	Provide the support they need when they struggle to complete the project.	Be ready to assist the team members when they face difficulties
Counselling	Providing the needed information to solve the problems.	Counselors have to choose the appropriate method.	Gather controlling rules, acts, norms, and laws, analyze them, and counsel the students.
Coaching	Providing advanced skills to team members to succeed.	Develop needed talents through coaching.	Be an expert in coaching.
Mentoring [44]	To resolve the personal and professional issues/ conflicts	Be available when they need advice and suggestions.	Be an expert mentor to team members.
Self-directed Learning	Plan to acquire the advanced skills, competencies, and attitudes needed.	Encourage them to choose massive open online courses [MOOCs] or provide suggestions to choose the needed courses.	Select needed research articles, books, MOOCs, and case studies that are needed for self-directed learning.
Appreciative Inquiry	Helping fellows recognize their strengths and plan to acquire the necessary skills.	Make them self-evaluate and identify their shortcomings.	Encourage faculty members and students to self-assess their best performances and identify weaknesses.
Rewards for Excellent Performances	Timely rewards for excellent performances and leading to new milestones.	Appreciate the best performance and reward them.	Reward and improve the vision of the faculty and students.
Shared Governance	Cooperation in sharing resources and technical staff.	Facilitate group problem-solving through quality circles.	Invite more assessment and guidance to solve the problems.

Decentralization	Creating opportunities for quick and timely decisions for projects during negotiations with clients	Make the groups responsible for auditing the progress to overcome bottlenecks and improve.	Decentralize the decision-making process and make them take care of planning decisions.
Empowerment	To bid and to employ adjunct faculty members.	Empower the faculty teams to bid for projects.	Empower the faculty to prepare technical and financial proposals in accordance with the norms.
Inventing Future	Utilizing excellence to solve emerging industry-specific problems.	Focus on challenges and train them to be ready to solve the problems.	Be a creative manager and plan innovative programs to address emerging challenges.
Immersed in New Technologies	Continuous updating of skills and competencies.	Provide courses in finishing schools.	Assess the growth of new technologies.
Engineering without borders	Focus on new emerging technologies in other nations and universities.	Let them learn to become global citizens.	Be open to assisting other developing countries without any discrimination.
Progressive Incorporation of New Technologies	Taking steps to conduct mini-courses, short-term courses, postgraduate programs, research and development programs.	Exposes to the growth of new technologies. Provide opportunities to learn through internships.	Plan and implement short-term courses on new technologies.
Global Challenges	Learning about emerging global challenges due to unforeseen disruptions.	Provide broad exposure to challenges and sustainable development issues.	Assess continuously emerging global challenges.
Global Mobility	Having a global mindset for travel.	Encourage attending global conferences.	Be prepared to travel to various countries to undertake development.
Creating a Network with other Development Institutions	Creating a consortium with other outstanding institutes, national labs, R&D centers of industries, and funding agencies.	Form a consortium of the best institutions to exchange advancements.	Create a consortium of experts, departments, and institutions.
Preparing Bid Documents for Consultancy Projects	Ready to resolve problems through projects based on the terms of reference.	Forward all the letters of invitation and train the faculty to prepare bids based on the terms and conditions. Review the bid documents and suggest improvements.	Be ready to prepare winning bid documents. A technical proposal has to meet the challenges. Financial proposals should demand adequate payments.
Scaffolding Global Leadership	Collaborating with other leading global faculty members.	Extend sabbatical leaves and permit them to join global institutes when they are selected.	Assess the problems and scaffold the project teams.

Stage 2: Focus on Associate Professors: After completing various learning programs, projects, and development programs, Associate Professors will be ready to plunge into global programs. However, they need more scaffolding and empowerment to plunge into challenging projects.

Table 4. Associate professors: Key performing competencies, desired competencies, needed development initiatives, and planned outcomes

Key Performing Competencies Over and Above Assistant Professors	Desired Competencies	Needed Development Initiatives	Planned Outcomes
Planning High-Quality Engineering Programs based on the Accreditation	An exposure to the macroeconomics of selected overseas countries, where they can collaborate for development.	Exposure to comparative global university programs and projects.	An in-depth vision to improve the skills and abilities of the faculty teams.
Completed many consultancy projects under various governments and private companies	Exposure to possible consultancy projects on the ongoing development projects under various IDAs.	A focused workshop on the art of planning bid documents under various IDAs.	Expertise, competencies, and achievement orientation.
Successfully published research papers through international conferences/ journals.	Mastered interdisciplinary competencies to select research topics and conduct research	Knowledge about the peer review process.	Expertise, competencies, and in-depth skills are needed to plan and complete research projects.
Participated in many global workshops organized by IDAs	Expertise in developing research methodologies and presenting them to a group of faculty members.	Institutes can offer the necessary skills through MOOCs, in-house programs, and international conferences.	Planning competencies are needed for consultancy projects.
Created vision for global programs	Ready to prepare a strategic plan centered around the letter of invitation (LOI).	Provide case studies on the successful completion of challenging projects.	Ready to interpret the terms and conditions of the global clients.
Capable of planning diverse courses for global participants	Select a set of sample courses, and analyze the training needs, resources, resource persons, funds, and contracts.	Exposure to various ongoing innovative programs in various universities.	Should be ready to plan diverse courses for a selected nation.
Capable of undertaking consultancy projects under various IDAs	Capable of checking the terms and conditions, nature of organizations, and nature of the faculty.	Assess the strengths and weaknesses of the institute team.	Be ready to undertake the consultancy project.

New Challenges:

1. Excellence in Developing Outcome-Oriented Curriculum, Participative Instructional Design, Conducting Curriculum-Specific on-the-job training in cooperation with the specified companies
2. Appreciative Inquiry, Innovations in Teaching, Interdisciplinary Instructional Packages, Interdisciplinary and Collaborative Research, International Publications, Creating Intellectual Properties, Services to Industries, Institutions, Society, and Engineering Departments, Global Consultancies under International Development Agencies

Stage 3 Professors: Key Performing Competencies, Development Initiatives, and Planned Outcomes

Table 4. Key performing competencies of professors

Key Performing Competencies over and above Associate Professors	Desired Competencies	Development Initiatives	Planned Outcomes
Capable of guiding globally focused research programs	Planning interdisciplinary research programs based on the needs of a nation	Skills in forming competent teams who have proven track records in global research programs	Outstanding skills in analysis, design, data interpretation, and drawing inferences.
Capable of preparing country-specific consultancy projects	Proven track record in completing consultancy projects.	Ready to assess the terms, conditions, resources, status of the institutes, planned growth, and vision of the authorities.	Propose the desired outcome based on in-depth analysis, and prepare and implement successful projects.
Undergone many visits to foreign universities	Should have in-depth expertise on the resources, people, opportunities, and potential for transformation in various countries.	Critical analysis, problem-solving abilities, and country-specific strategic planning for radical growth.	Creating a vision for radical growth.
Capable of conducting international conferences on upcoming technologies	Should have sufficient expertise in planning international conferences to share the expertise of various researchers and their impact on the macroeconomy.	Ready to explore the resources, people, development organizations, potential areas for commercial development, and formulate strategic planning	Ready to lead a country-specific development team and plan various projects, resulting in capacity development, quality improvement, and efficiency improvement.
Capable of organizing needed global faculty development programs	A variety of expertise and track records in organizing and implementing diverse global faculty development.	Ready to join development initiatives under various IDAs.	Institutionalize the development programs for critical faculty members and administrators through in-country development institutes.

New Challenges:

1. Academic Administration, Interdisciplinary Research Center Director
2. Supporting fast-developing professors
3. Scaffolding to Reach Global Leadership

Stage 4 Dean: Key Performing Competencies, Desired Competencies, Development Initiatives, and Planned Outcomes

Table 5. Key performing competencies of deans

Key Performing Competencies Over and Professor	Desired Competencies	Development Initiatives	Planned Outcomes
Supportive Leadership [28][29][30]	Possing Outstanding leadership qualities	Proven track record in Human Resource Development	Transformative skills in global leadership
Skills in assessing growth based on new technologies [34]	Expertise in assessing the growth of disruptive technologies	Success in planning a range of new technology programs based on cutting-edge technologies	Capable of identifying and selecting promising technologies

Skills in planning cutting-edge programs around new technologies	Working with various regional and national development teams	Success in implementing cutting-edge technologies through developed faculty members and institutions	Capable of developing local experts to plan cutting-edge programs
Getting research and development funds from National Councils/ Commissions, and Global Agencies	Developing award-winning and Outstanding Research and Development Projects under various agencies	Track record in getting needed funds from various global agencies	Developing local teams to prepare research proposals for getting funds
Member of Development Teams under IDAs, World Bank, Asian Development Bank, UNDP, UNESCO, USAID, etc.	Invited as a member of the country-specific expert in planning and developing projects	Outstanding record of participating in various IDAs.	Planning and guiding new faculty members to work in various IDAs

New Challenges:

1. Developing and Maintaining High-Performing Deans
2. Exposure to Global Leadership
3. Challenges
4. Collaborating with International Development Agencies (IDAs) and Universities
5. Bidding for Consultancy Projects under IDAs
6. Improving Return on Investments (ROI)
7. Establishing a Center for Diverse Global Faculty Development
8. Conducting International Conferences, Workshops, Peripatetic Seminars, and Study Visits
9. Building a Culture of Shared Equity Leadership
10. Pathways to the Presidency

Stage 5 Directors/Vice-chancellors/ Presidents/Provosts: Key Performing Competencies, Desired Competencies, and Planned Outcomes

Table 6. Key Performing competencies of directors/vice-chancellors/presidents/provosts

Key Performing Competencies	Desired Competencies	Development Initiatives	Planned Outcomes
Institutional Focus of Development	Global Focus [11][12]	Understanding of deficiencies in strategic planning in the institutes	Global Focus on Development
Regional Focus of Development	Global Focus [19][20][21]	Understanding deficits in strategic planning in the region	Engineering education without boundaries
National Focus of Development	Global Focus	Understanding the deficiencies in strategic planning at the national level	Formation of a consortium for exchanging faculty members, starting global interdisciplinary research and development programs

New Roles of College Principals/Directors/Presidents:

1. Administrative Acumen, Decentralizing administration, Empowerment of deans, and Fundraising Abilities
2. Planning to Overcome Vulnerability, Uncertainty, Complexity, Ambiguity
3. Strategic Planning to meet the challenges in the era of Disruptions
4. Seeking Support from Academic Deans, Community, Alumni, Industries, Faculty Teams, Government, Funding Councils, Philanthropies, International Development

Agencies, Social Media, Foreign Universities, Professional Associations, Global Universities

5. Continuous Assessment of Impacts of the Programs of the Institutes
6. Establishing Centers of Excellence, Research Parks
7. Collaboration with international clients
8. Diverse Faculty Recruitment, Development, Scaffolding
9. Global Consultancy Centers for Institutional Development
10. Outstanding Leadership Skills, Creating Linkages with the Stakeholders [18][19][20]
11. Fostering a Culture of Innovation
12. Every Year Tactical Planning
13. Create a Vision for Alignment with Innovative Leaders
14. Linking Innovation to the Institution's Mission

5.1. Planning for diverse global programs

Only a few of the Indian universities and Institutes of national importance have focused on diverse global faculty development programs. Since the National Education Policy 2020 recommended offering diverse global programs, there is a need for support from the Ministries of Education, External Affairs, and Finance, as well as the Indian Council for Cultural Relations. Indian institutes have to improve their faculty members' vision and skills. Well-performing State Technical Universities and established Deemed-to-be Universities can also plan overseas campuses based on bilateral ties, funding from local governments, soft loans from International development agencies, and local donors. They can collaborate with the existing well-developed universities, industries, and commercial organizations. They plan the institutions most needed to meet global standards. According to local rules and regulations, these institutes can be registered. If needed, a consortium can be formed with other universities to share academic programs.

5.2. Significant outcomes at national and global levels

The most significant outcomes are:

- Successful establishment of faculty development programs from certificate courses to interdisciplinary doctoral programs
- Developing vocational teachers, polytechnic teachers, engineering college faculty members, executives of various private organizations and government departments
- Developing diverse global faculty members and executives through Certificates and Advanced Certificate courses
- Successful development of instructional packages for polytechnics, engineering colleges, diverse global faculty members, and MSMEs
- Outstanding contributions to knowledge capital through research articles
- Collaborating with State Directorates of Technical Education by offering needed services through the Extension Centers in their states
- Collaborating with many International Development Agencies (IDAs) by offering consultancy programs for various developing nations
- Undertaking sponsored research and development projects under the World Bank Assisted Programs in Technical Education, Indian Council of Forestry Research and Education
- Cooperating with the National Development Group under the Ministry of Education

- Cooperating with State Higher Education Councils, Academic Staff Colleges, Irrigation Management and Training Institute, and the Center for Water Management, Research and Development.

5.3. Enabling factors

The following are enabling factors:

- Academic, Administrative, and Financial autonomy
- Timely approval by the Ministry of Education, the Ministry of External Affairs, and the Ministry of Finance of the Government of India
- Outstanding faculty teams with intrinsic and achievement motivations
- Adequate resources and campus facilities
- Continuous faculty development through global universities
- Global vision

6. Discussion

Until 2020, global programs had not been approved due to government policy, but TTTI Chennai systematically planned diverse global faculty development programs since 1980 under UNESCO's Asian Pacific Educational Innovation for Development. From 1982 onward, diverse global faculty development programs were administered by the Ministry of External Affairs, the Ministry of Finance, and the Indian Council for Cultural Affairs. The Ministry of Human Resource Development not only approved these programs but also advised the other three TTTIs in Bhopal, Chandigarh, and Kolkata to implement them. Bhopal implemented some programs. The funds generated have supplemented the grants-in-aid. Many International Development Agencies, such as the Asian Development Bank, UNDP, USAID, DANIDA, SIDA, and the World Bank, were looking for consultancy organizations to undertake various project-based programs. The intrinsically motivated faculty members bid on consultancy projects based on their experience. The Ministry of Education has permitted the institute's high-performing faculty members to participate in many global projects. They have offered faculty and institutional development programs through various International Development Agencies (IDAs). Now, under the National Education Policy 2020, most higher education institutions are focusing on diverse global programs. The need for developing faculty members arises. It is considered to offer needed faculty development programs to all tenured faculty members. Ultimately, their professional skills will improve, and they can bid for and undertake training and development projects with MNCs, IDAs, and the Indian corporate sector. This will bring substantial revenue and create collaboration for development. Based on the NEP 2020 [49], more high-performing institutes will plan many overseas institutes in various countries.

6.1. Validation

Various autonomous institutions have welcomed this model, and the faculty members have been trained. However, it may take longer to create the necessary resources and outstanding faculty teams to practice. However, none of the national institutes and institutes of national importance have planned their methodology.

6. Conclusions

Initiatives taken by TTTIs have yielded substantial experiences, and the viability of planning and implementing diverse global faculty members. Now, a large number of institutes

of national importance will launch overseas campuses in Africa and Asia. The five-stage faculty development model will provide a systematic approach to training and developing tenured faculty members. Various other countries can also replicate these models. These will build the institutes' reputations and attract high-performing faculty members to help many developing nations improve their human capital. Further, this approach brings linkages with the corporate sector, MNCs, and IDAs. The graduates can become industry-ready and take on complex tasks with ease. MNCs that establish their overseas production units here will be assured of access to excellent engineering graduates for product design, manufacturing, and maintenance. With the Government of India's liberal approval, more important national institutes will launch overseas centers in Asia, Africa, and Oceania, benefiting from this. Meanwhile, the administrators have to develop their faculty to offer outstanding programs in overseas countries, select country-specific graduate programs, and deliver them. Ultimately, one can ensure that engineers without borders.

6.1. Limitations of this study

This study focused on diverse global faculty members undertaking consultancy projects under several IDAs and the Indian corporate sector. The programs lasted 8 to 16 weeks. Only very few overseas candidates have undergone long-term courses and interdisciplinary PhD programs. Further, this institute conducted technical working group meetings in Asian countries under UNESCO's APEID programs.

6.2. Suggestions for future study

It is recommended to undertake similar focused research and adapt it to the competencies of local faculty members, the local culture, government policies, available resources, instructional media, and linkages with client institutions.

7. References

- [1] Academic Impressions, "Developing Students as Global Leaders through Faculty-led Programs," (n.d.). Available: <https://www.academicimpressions.com/students-global-leaders>
- [2] Academic Leadership Group, "Unlocking Success: Key Qualities of Academic Leaders in Shaping Higher Education's Future," (n.d.). Available: <https://academicleadershipgroup.com/blog/unlocking-success-key-qualities-of-academic-leaders-in-shaping-higher-educations-future>
- [3] Academic Leadership Group, "Leading the Way: Academic Leaders and a Culture of Innovation," (n.d.). Available: <https://academicleadershipgroup.com/blog/leading-the-way-academic-leaders-and-a-culture-of-innovation>
- [4] Amazon.com, "Art & Science of Leadership Global Ed," (n.d.). Available: <https://www.amazon.com/Art-Science-Leadership-7th/dp/1292060132>
- [5] American Council on Education, "Good Practice in Tenure Evaluation: Advice for Tenured Faculty, Department Chairs, and Academic Administrators," (2005). Available: <https://www.acenet.edu>
- [6] American Council on Education, "College Presidents Finding New Ways to Lead Amid Growing Challenges," (2018). Available: <https://www.acenet.edu/News-Room/pages/College-Presidents-Finding-New-Ways-to-Lead-Amid-Growing-Challenges>
- [7] S. Anita, "Analysis of Indian Engineering and Technology Institutes Capacity to Global Offer Programs under General Agreement on Trade in Services/World Trade Organization," Ph.D. dissertation, University of Madras, Chennai, India, (2009)

- [8] S. Anita and V. Thanikachalam, "Development of Overseas Programmes by Indian Engineering and Technical Institutes under GATS," in Proceedings of the International Conference on Global Challenges in Engineering Education and Research, PSG College of Engineering and Technology, Coimbatore, Tamil Nadu, India, Dec. 4–5, **(2008)**
- [9] S. Anita and V. Thanikachalam, "Internationalization of Technical Institutes – A Practical Approach," in Proceedings of the International Seminar on Globalization of Indian Engineering Education, National Institute of Technical Teachers Training and Research, Chennai, India, vol.1, pp.39–52, **(2009)**
- [10] S. Anita and V. Thanikachalam, "International Programme Structure for Internationalizing Indian Technical Institutes," Journal of Technical and Vocational Education, vol.35, no.1–2, pp.33–47, **(2009)**
- [11] A. Tichnor-Wagner, "Globally Minded Leadership: A New Approach for Leading Schools in Diverse Democracies," International Journal of Education Policy & Leadership, vol.15, no.2, **(2019)**
- [12] T. Benson and C. Trower, "Data, Leadership, and Catalyzing Culture Change," Change: The Magazine of Higher Learning, vol.44, no.4, pp.27–34, **(2012)**
- [13] Business Today, "IIT D in Nepal, UAE, Egypt, Saudi Arabia, Abu Dhabi," (2023). Available: <https://www.businesstoday.in/latest/corporate/story/iits-in-uae-sri-lanka-nepal-egypt-saudi-arabia>
- [14] J. S. Black and M. E. Mendenhall, "A Practical but Theory-Based Framework for Selecting Cross-Cultural Training Methods," in M. E. Mendenhall, G. R. Oddou, and G. K. Stahl (Eds.), Readings and Cases in International Human Resources Management, New York, NY: Routledge, **(2007)**
- [15] Deloitte, "Pathways to the University Presidency," (n.d.). Available: https://www2.deloitte.com/content/dam/insights/us/articles/3361_Pathways-to-the-university-presidency
- [16] D. R. Euben and B. A. Lee, "Managing Faculty Productivity after Tenure," Legal Issues in Higher Education, Rutgers University and American Association of University Professors, **(2005)**
- [17] E. H. Simmons, "Supporting Academic Staff," (2017). Available: <http://cte.tcu.edu/wp-content/uploads/Supporting-Faculty-Productivity-After-Tenure-EAB.pdf>
- [18] Global Leaders Institute, "Academic Board/Global Leaders Institute," (n.d.). Available: <https://www.globalleadersinstitute.org/academic-board>
- [19] D. T. Hall, G. Zhu, and A. Yen, "Developing Global Leaders: To Hold on to Them, Let Them Go!," in W. H. Mobley and M. W. J. McCall (Eds.), Advances in Global Leadership, vol.2, pp.327–349, New York: JAI Press, **(2001)**
- [20] Harvard Business Review, "The Art of Developing Truly Global Leaders," (2011). Available: <https://hbr.org/2011/04/the-art-of-developing-truly-global-leaders>
- [21] Hunt Scanlon Media, "7 Qualities to Look for in a College President," (n.d.). Available: <https://huntscanlon.com/7-qualities-to-look-for-in-a-college-president>
- [22] J. P. Sampson Jr., M. P. Driscoll, D. F. Foulk, and P. S. Carroll, "Successful Faculty Performance in Teaching, Research, Original Creative Work, and Service," (2010). Available: <https://fda.fsu.edu/context/download/25448/16336/successful-performance.pdf>
- [23] J. S. P., "Developmental Approach to Global Leadership," International Journal of Leadership Studies, vol.6, no.2, **(2011)**
- [24] University of Illinois, "Global Leaders Program, College of Liberal Arts & Sciences," (n.d.). Available: <https://las.illinois.edu/resources/international/globallearning/leaders>
- [25] L. Engel, H. Gibson, and K. Gatalica, "Global Education in Context: Four Models, Four Lessons," Education Week, (2019). Available: <https://www.edweek.org/policy-politics/opinion-global-education-in-context-four-models-four-lessons/2019/01>
- [26] O. Levy, S. Beechler, S. Taylor, and N. Boyacigiller, "What We Talk About When We Talk About 'Global Mindset': Managerial Cognition in Multinational Corporations," Journal of International Business Studies, vol.38, no.2, pp.231–258, **(2007)**
- [27] K. Mamiseishvili, M. T. Miller, and D. Lee, "Beyond Teaching and Research: Faculty Perceptions of Service Roles at Research Universities," Innovative Higher Education, vol.41, no.4, pp.273–285, **(2016)**

- [28] K. Mathews, *Perspectives on Midcareer Faculty and Advice for Supporting Them*, Cambridge: Collaborative on Academic Careers in Higher Education, **(2014)**
- [29] MDI, "International Leadership Development at MDI – Our Worldwide Programs," (n.d.). Available: <https://mdi-training.com/leadership-development/international-projects>
- [30] MDI, "International Leadership – At the Pulse of Time," (n.d.). Available: <https://www.mdi-training.com/international-leadership>
- [31] Society for Neuroscience, "Leveling the Playing Field Improved Tenure and Promotion," (n.d.). Available: <https://neuronline.sfn.org/diversity/leveling-the-playing-field-improved-tenure-and-promotion>
- [32] M. Ott and J. Cisneros, "Understanding the Changing Faculty Workforce in Higher Education: A Comparison of Non-Tenure Track and Tenure Line Experiences," *Education Policy Analysis Archives*, vol.23, Art.no.90, **(2015)**
- [33] B. C. Russell, "Stress in Senior Faculty Careers," *New Directions for Higher Education*, vol.151, pp.61–70, **(2010)**
- [34] Sam Houston State University, "Performance Evaluation of Tenured Faculty," Academic Policy Statement 980204, (2023). Available: <https://shsu.edu/dept/academic-affairs/documents/aps/980204%20Performance%20Evaluation%20of%20Tenured%20Faculty>
- [35] E. B. Sloan, J. F. Hazucha, and P. T. Van Katwyk, "Strategic Management of Global Leadership Talent," in W. H. Mobley and P. W. Dorfman (Eds.), *Advances in Global Leadership*, vol.3, pp.235–274, New York: JAI Press, **(2003)**
- [36] S P Jain School of Global Management, "Bachelor of Data Science in Australia," (n.d.). Available: <https://www.spjain.org/bachelor-of-data-science>
- [37] V. Thanikachalam, "Role of Leadership with Equity, Integrity, Ethics, Humility, and Outstanding Culture in the Development of Engineering Institutions," (2023). DOI:10.32388/T4FP03
- [38] V. Thanikachalam, "Strategies to Resolve Toxic Leadership Actions in Engineering Institutions that Impede Faculty Performance and Innovation," (2023). DOI:10.32388/21DW50
- [39] V. Thanikachalam, "Art, Science, and Technology of Safeguarding the Outstanding Engineering Faculty Members from the Institutional Hazards, Planned Destructions, and Booby Traps," (2023). DOI:10.32388/2HH4YQ
- [40] V. Thanikachalam, "Developing and Supporting High-Performing Faculty Teams in Engineering Institutions," (2023). DOI:10.32388/YYYYDM3
- [41] V. Thanikachalam, "Creating Sustainable and Outstanding Institutional Culture in Engineering Education in India to Develop High-Performing Institutions," (2023). DOI:10.32388/1S9QB6
- [42] V. Thanikachalam, "Generating Smart Goals of Engineering Education Institutes in the Fast-Developing Countries," (2023). DOI:10.32388/T69GKZ
- [43] V. Thanikachalam, "Facilitating Outstanding Engineering Faculty Members in India through Training from Recruitment to Retirement," (2024). DOI:10.32388/RHQHB3
- [44] V. Thanikachalam, "Creating a Happy Educational Environment in Engineering Institutions to Sustain Outstanding Performance by Well-Accomplished Faculty Teams through the 'RODEORR' Model," (2024). DOI:10.32388/QKVSUS
- [45] V. Thanikachalam, "Inspiring a Culture of Appreciation of High-Performing Faculty Members and Research Scholars," (2024). DOI:10.32388/OGHZXE
- [46] C. Trower, "Socrates, Thoreau, and Status Quo," in R. L. Clark and M. D'Ambrosio (Eds.), *The New Balancing Act in the Business of Higher Education*, Northampton, MA: Edward Elgar, **(2006)**
- [47] C. Trower, *Senior Faculty Vitality*, TIAA Institute, TIAA-CREF, **(2011)**
- [48] National Institute of Technical Teachers Training and Research, National Institute of Technical Teachers Training and Research, Bhopal, India, (n.d.). Available: <https://www.nitttrbpl.ac.in>
- [49] National Institute of Technical Teachers Training and Research, National Institute of Technical Teachers Training and Research, Chennai, India, (n.d.). Available: <https://www.nitttrc.ac.in>

- [50] Ministry of Human Resource Development, National Education Policy 2020, New Delhi, India, **(2020)**
- [51] P. B. Smith and M. F. Peterson, "Cross-Cultural Leadership," in M. J. Gannon and K. L. Newman (Eds.), *Handbook of Management*, Oxford, U.K. and Malden, MA: Blackwell Business, **(2000)**
- [52] D. A. Robinson and M. Harvey, "Global Leadership in a Culturally Diverse World," *Management Decision*, vol.46, no.3, pp.466–480, **(2008)**
- [53] R. Hickey and D. Davies, "The Common Factors Underlying Successful International Branch Campuses towards a Conceptual Decision-Making Framework," *Globalisation, Societies and Education*, (2022). DOI:10.1080/14767724.2022.2037072
- [54] J. M. M. Sierra and J. Lumbras, "Internationalization and Innovation in Higher Education (I2HE)," (2015). Available: https://sepie.es/internationalisation_research.pdf
- [55] G. Miotto, C. Del-Castillo-Feito, and A. B. Gonzalez, "Reputation and Legitimacy: Key Factors for Higher Education Institutions' Sustained Competitive Advantage," *Journal of Business Research*, vol.112, pp.342–353, (2020). DOI:10.1016/j.jbusres.2019.11.076
- [56] T. Mazzarol, G. N. Soutar, and M. Seng, "The Third Wave: Future Trends in International Education," *International Journal of Educational Management*, vol.17, no.3, pp.90–99, **(2003)**
- [57] N. Gomer, International Branch Campuses, Master's thesis, City College of New York, New York, NY, **(2015)**
- [58] E. Girdzijauskaitė, A. Radzevičienė, A. Jakubavičius, and A. Banaitis, "International Branch Campuses as an Entry Mode to the Foreign Education Market," *Administrative Sciences*, vol.9, no.2, Art.no.44, (2019). DOI:10.3390/admsci9020044
- [59] M. Clifford, Assessing the Feasibility of International Branch Campuses: Factors Universities Consider when Establishing Campus Abroad, Ph.D. dissertation, Pardee RAND Graduate School, Santa Monica, CA, **(2015)**
- [60] Indira Gandhi National Open University, New Delhi, India, (n.d.)

Authors



Thanikachalam Vedhathiri

Former Professor and HOD for the Center for International Affairs, Program Executive for Continuing Education.

B.E. (1968, Civil Engineering, University of Madras); M. Tech (1970, Soil Mechanics and Foundation Engineering, Indian Institute of Technology, Madras)

PhD (1975, Design of Filters for Earth Dams, University of Madras

M.S. (1988, Instruction System Technology, Indiana University, Bloomington, IN, USA), FIGS, FIE, FFIUCEE

Former Senior Researcher under the Fulbright Scheme, USA, Coordinator of the UNESCO-APEID project, Course Director of Diverse Global Faculty Development Programs

Founder Professor of Overseas Faculty Development Programs, Nodal Officer for the World Bank-assisted projects in Technical Education



Anita. S.

Associate Professor, RMK Engineering College, Chennai

B.E. (Electrical and Electronics Engineering, Bharathidasan University, M.S. (Software Systems, BITS Pilani)

M.E. (Power Electronics and Drives, Anna University

Ph.D. (2009, Engineering Education, University of Madras)

Ph.D. (Electrical Engineering, Anna University) and FIE.

Corporate Trainer