Research Article

# Art and Science of Creating High-Performing Faculty Members and Retaining Them in Indian Engineering Institutions

**Thanikachalam Vedhathiri**[1]

1. National Institute of Technical Teachers Training and Research (NITTTR), Chennai, India

**The arts and Science of creating high-performing faculty members and retaining them in Indian engineering institutions have become a very essential need to meet the global challenges and fast-growing disruptive technologies. In this social science-based research, 1021 middle-level faculty members from various types of engineering colleges in the Southern region of India have been purposely selected to identify various obstacles that they faced in planning interdisciplinary graduate, postgraduate, and interdisciplinary research and development programs, including diverse global faculty members in region-specific programs, bidding for consultancy projects under many international development agencies, and planning international conferences. Based on the problems identified by them the following development processes have been suggested: 1. Counseling, Coaching, Mentoring, and Rewarding High-Performers; 2. Developing Faculty Members at various Stages of Growth, 3. Priority Decisions based on the Norms, Acts, and Laws; 3. Identifying Critical Success Factors and Acting on them; 4. Establishing Educational Ecosystem; 5. Scaffolding the Best-Performing Faculty Teams to Reach Excellence, 6. Followup of Outstanding Programs, 7. Celebration of Outstanding Programs, and 8. Scaffolding of the Best Performing Faculty Members. The whole development process has been validated in 10 different engineering colleges and state technical universities. The administrators have expressed their success in developing their faculty members to a large extent. One of the limitations is the research study was limited to the Southern Region of India. Additional research study an All-India basis have been indicated.**

**Corresponding author:** Thanikachalam Vedhathiri, vthani2025@gmail.com

## I. Introduction

### *1.1. Governance In Higher Education In India*

The Ministry of Education is one of the developers of higher education institutes and they create National Education Policy from time to time. All the institutes in higher education institutes in engineering and technology are guided by various rules, norms, and standards prepared by the University Grants Commission, and the All-India Council for Technical Education, each institute is governed by the Society's Rule. All the autonomous institutes are guided by a Board of Governors. Every institute has developed a Service and Recruitment Rule for recruiting faculty members. Even under these strict rules and regulations many toxic leaders and administrators have found loopholes and efficiently recruited poor quality candidates. They use their coteries to find ways to eliminate high-performing candidates. The toxic group grows at a fast speed with the patronage of the toxic leader. They eliminate the credentials, accomplishments, and services rendered by high-performing candidates.

Sometimes they even eliminate the best candidates from the interview or advise the experts not to select the best candidates. Most of the informal group of toxic faculty members will not possess the required qualifications and intrinsic motivation to achieve excellence. The draft National Education Policy 2019 of India assessed weak leadership and governance and stated that "Unfortunately, governance and leadership of the majority of institutions of higher education in India has been severely compromised. Institutions have been plagued by external interference at both these levels. Such external influence has deleted the independence and effectiveness of the institution, and often wielded nor for good of the institution but for serving vested interests". Further, it states that "leaders must demonstrate strong alignment to Constitutional values and the overall vision of the institution, along with attributes such as a strong social commitment, belief in teamwork, pluralism, ability to work with diverse people, and positive outlook. These attributes and capacities are important for all leadership roles within a higher education institute, not only that of the head of the institution." This research paper has been planned to achieve excellence in engineering education by developing high-performing faculty teams, nurturing them, continuously scaffolding them, and creating needed knowledge capital and human capital. In this 21$^{st}$ Century, the globalized economy of India needs high-performing engineering faculty members who could be nurtured by state technical universities, institutes of national importance, deemed universities, autonomous colleges, and private engineering, and government engineering colleges. We need innovation-focused servant leaders who can focus on the growth of outstanding faculty teams.

## II. Literature Survey

Leadership is considered a vital managerial function that helps to direct the institution's resources for improved efficiency and achievement of goals. John Tierney (2012) has researched why so many teachers quit their jobs. John Tierney concluded that the most important factor influencing commitment was the beginning teacher's perception of how well the director worked with the faculty as a whole. This was a stronger factor than the adequacy of resources, the extent of a teacher's administrative duties, the manageability of his or her workload, or the frequency of professional development opportunities. An effective leader provides clarity of purpose, and motives, and guides the institution to realize its mission. On the other hand, a toxic leader lacks self-control and ignores the institution to realize its mission (Nourhan Md. Younis, Raniah Abd Elmoniem Shamah, and Heba Elsayed Eibadawy (2021). According to Susan DcWoody (2016), faculty members play a key role in the success of institutions, which are more likely to thrive when faculty experience higher levels of job satisfaction. Traditional leadership approaches may leave the faculty experience lacking, thus servant leadership has been suggested as a potential leadership model that may increase faculty leadership. Alfia Kohn(1993) stated that everyone is pressuring the system for individual gains. No one is improving the system for collective gain. Without teamwork, in other words, there can be no quality. According to ETL Evolution if both the faculty and administration have the mission at the core of all they do, then the university has the first step in place. The administration often leads the culture of the university, and they must be seen as advocates for both faculty and the student body. When the faculty and administration work together as one team, the success of the university moves forward. Tern Glvens (2018) concluded that a collaborative approach, working with accreditors, to find a path that helps all provide the best education for students. Thanikachalam Vedhathi (2023) identified the role of leadership with equity, integrity, ethics, humility, and outstanding culture in the development of engineering institutions. Further, he focused on developing and supporting high-performing faculty teams in engineering institutions. In addition to these papers, he suggested methods to create a sustainable and outstanding institutional culture in engineering education in India to develop high-performing institutions. Many high-performing faculty members suffered due to toxic leaders. He suggested strategies to resolve toxic leadership actions in engineering institutions that impede faculty performance and innovation. The

engineering institutes in India have not planned the needed courses in ethics and hence he suggested developing appropriate courses in ethics. Ram Charan (2016) stated that nothing good comes of having the wrong chief executive officer (CEO). Mentoring, coaching, senior team members with complementary skills, and special help from the board can't compensate. The misses are devastating and very public. According to him, there are two or three capabilities that are tightly interwoven and required for a new leader to succeed which is termed as "the pivot". The institutional leaders should focus on the proven institutional development acumen and very strong values. The selection committee should not play favorites and should assess the candidate's strengths and match with the requirements of the institute. The leader should focus on institutional culture (goals, values, beliefs, and norms), institutional climate, motivated behavior, teamwork, organizational structure, resources, and leadership style. They have to focus on the institutional performance: academic tasks, faculty cognitive abilities and skills, faculty needs and values, their motivation, and institutional performance. Joel Trammell (2015) stated the following factors for a new leader: Prior experience in the CEO role, university size, number of departments/schools, relevant experience in interdisciplinary research, publication, invention, patenting, establishing new institutions, creating linkages with international development agencies, transnational companies, and offering executive development programs.

Extrinsic and Intrinsic Rewards: Extrinsic rewards are usually financial or tangible rewards given to faculty members like elevating them to higher academic cadres, advance increments, sponsoring to attend a faculty development program, reimbursing the cost of laptop and internet service rent, book purchase, journal subscription, and cost of international association membership. They are a powerful lever to reinforce and drive the behaviors that a culture values most. Intrinsic rewards are psychological rewards that faculty members get from doing excellent projects. They are to because they are internal to the work being completed and achieving excellence largely depends on one's cognitive efforts. They are essential to sustained behavioral change. Institute leaders should create intrinsic motivation by permitting the faculty members to undertake self-managing and adding value to their projects by innovating problem-solving and innovation. Intrinsic reward brings a positive reaction.

Most of the Board members need to focus on the comparative study of the growth and achievement of similar organizations. They have to assess the present achievement and possible growth in the next year.

**Racial Discrimination in Higher Education in India**: It refers to the differential treatment of faculty members based on the caste system, their race, or ethnicity. It can manifest in various forms such as the exclusion of faculty members from international programs, denying them to elevate into higher academic cadres, and /or administrators sanctioning advance increments for well-performing faculty members. Race and Gender Bias and Discrimination in Higher Education have grown in India (Thoughtco, 2018). Many students from lower communities are biased in India (Brookings, 2020). Racism in Indian universities has been institutionalized by upper-caste leaders and administrators (The Guardian,2019). Many political parties have developed in India to fight against racial inequality in higher education structural racism. According to the World Economic Forum (2023), higher education is still confronted with perpetual racism. Lower caste faculty members have been systematically excluded from attaining higher positions. Many outstanding faculty members who are from lower castes are always discriminated against.

## III. Research Objectives

The following research objectives have been chosen for this research study:

1. Assess the governance in higher education in India.

2. Identify the obstructions faced by the high-performing faculty teams in engineering colleges.
3. Suggest appropriate faculty development methods from entry to exit.
4. Identify the priority decisions on development based on the norms, acts, and laws.
5. Check the critical success factors in the faculty development
6. Creating a desired educational ecosystem
7. Scaffolding the best-performing faculty teams
8. Validation of the suggested development model

### *3.1. Research Methodology*

It is based on the Social Science approach based on naturalistic inquiry developed by Guba and Lincon (1994). The participants were informed of the goals of the research work and a detailed questionnaire was distributed. They have to identify the problems faced by them in planning, developing technical and financial proposals for bidding, preparing for industry-specific and outcome-based research programs, planning to develop organizational and international seminars or conferences, planning continuing education programs for the employees of the government departments and regional companies, applying for advanced international faculty development programs under various bilateral programs, establishing a modern laboratory or workshop, sharing the project gains, publishing textbooks, drawing manuals, laboratory manuals, or case studies, planning to produce educational television programs, preparing multimedia learning packages, or planning additional courses for the students, or finishing school programs for students or planning on-the-job training to the students. Further, they have been to suggest solutions based on the quality circle.

#### *3.1.1. Population*

The population consists of excellent middle-level engineering faculty members who are fully qualified and immensely contributing to outstanding industry-specific curricula, offering interdisciplinary graduate and postgraduate programs, and have undertaken many consultancy projects under various multinational companies. These middle-level faculty teams have another 15 to 20 years of active service and many of them can reach the highest academic positions like leaders and administrators. They dream of achieving their intrinsic motivation by equipping themselves with fast-growing cognitive abilities and motor skills. All of them have a positive attitude toward the growth of human and knowledge capital. They continuously plan to undergo many advanced courses that are offered by various international development agencies and the Ministry of Education. They are the selected participants for this research program. During their dedicated work, they would have faced many obstructions and bottlenecks. They can suggest many implementable and cost-effective solutions to overcome their difficulties.

#### *3.1.2. Sample*

1021 middle-level faculty members have joined this research project which was continued for four years. All of them have excellent accomplishments and actively contribute to outcome-based curriculum development, planning participative instruction, choosing field-specific case studies, and completing many consultancy projects. They attended many faculty development projects in institutional development and prepared appropriate technical and financial proposals for projects under various agencies. They are keenly interested in creating an appropriate academic ecosystem, and outstanding resources

and expect support from their institutions. Many times they could not get needed resources, funds, and just-in training for the projects. The outcomes of the quality circles are presented in the following sections:

## IV. Suggested Methods of Counselling, Coaching, Mentoring, Rewarding The High-Performing Faculty Members

### *4.1. Improving Interpersonal Relationships among the Faculty Members and the administrator for planned Growth of the Faculty Members as well as the Institute*

#### *4.1.1. Fresh Faculty Members*

One of the critical issues in any organization is maintaining good interpersonal relationships among the members. The fresh faculty members need solutions to many problems in planning course schedules, preparing course materials, conducting classes, preparing test papers, conducting laboratory classes, planning field visits, etc. They need assistance to overcome the problems. Here good interpersonal relations with fellow faculty members, staff, and administrators are required. The laboratory charge needs to provide consumables, measuring equipment, recorders, etc. Also, when they join the institute, they need to know the resources available in various laboratories and workshops. Here they need to be assisted to plan the workshop activities. They need to know the travel allowances, rules for planning field trips, restrictions in the payment of boarding and lodging, mode of travel, and limits in contingency expenditure. In the case of medical problems, they need to know the rules for getting reimbursement for medical expenses. It is expected a senior member of the department to guide all these issues. A few institutions have prepared faculty guidebooks to provide needed information on all activities.

When faculty members face choosing retirement benefits, they need to be advised on choosing the best product. If the newly joined faculty members are misguided, they will be put into bigger losses and it may be impossible to reverse the process. They need an orientation towards various revised laws, rules, norms, and standards. Only very few institutes offer a short well-designed orientation program. The newly joined faculty members need to plan for the enrichment of their cognitive abilities and skills through various in-house faculty development programs, undergoing online courses, registering for external courses offered by universities, human resource development courses, industrial exposure, etc. The department has to prepare a faculty development program and include them. The department can appoint a counselor, a coach, or a mentor. This will facilitate the recruits to plan the day-to-day and long-term activities.

In many branches of engineering, faculty members plan to enroll in well-organized and advanced programs that are planned at national and international levels. Each program will fix minimum qualifications, age, and the type of courses that are handled by the prospective candidate for selection. The head of the department can advise the faculty members to apply for such courses and the courses that they have to undertake when they return. If there is any bond to be executed, the faculty needs more guidance. By following these suggestions, one can retain the best faculty members and attract well-accomplished and achievement-oriented budding faculty members.

#### *4.1.2. In the first two years*

The faculty members need to offer many industry-focused courses, training undergone, outcome of training, and involvement in ongoing research projects and consultancy projects. They have to prepare a detailed report for placing it before the

assessment committee to get the declaration of completion of probation. The draft report has to be reviewed by the head of the department and improvement in the presentation has to be offered.

#### *4.1.3. In the next five years*

The faculty members are to be allotted significant areas for offering industry-specific courses, developing textbooks, drawing manuals, laboratory manuals, and item banks. They have to prepare project proposals for funding from various agencies. Here mentoring becomes essential. They have to become a promising member to undertake cutting-edge courses, prepare multimedia learning packages, and plan training programs for the employees of various organizations. This demands an in-depth knowledge of conducting needs analysis, preparing program objectives, developing resource materials, and planning participative presentations.

#### *4.1.4. In the next 10 years*

The faculty members would have acquired enough cognitive expertise in planning various courses, research and development programs, bidding for employee development programs, and developing revenue from consultancy projects. Now they have to offer doctoral programs, plan to conduct executive development programs, plan state-level conferences, publish excellent textbooks, ready to join the global faculty teams, and professional associations. They need to be given challenging problems and projects. They have to prepare project-specific technical and financial proposals for bidding for development projects under the International Development Agencies and multinational development companies. They have to be assisted to become a leader and expert in their area of specialization. They need autonomy in their academic programs and projects. They need appreciative inquiry and new goals for accomplishment. They need to counsel newly joined faculty members and introduce them to various innovative projects.

#### *4.1.5. In the next 20 years*

They will reach an advanced level to head a department and plan innovative development activities. They need to offer new interdisciplinary postgraduate and doctoral programs in many industry-specific areas. They need more authority in managing their departments. They should be permitted to undergo many advanced programs under appropriate international development agencies, and global universities, undertaking postdoctoral programs. Provide sabbatical leave for joining a center of advanced research in their area of specialization. It is always important to provide additional responsibilities in planning advanced programs to meet the challenges of disruptions. Their performances need to be assessed and their accomplishments are to be appreciated. There should not be any restrictions and bottlenecks in planning and implementing advanced courses and projects. Their revenues generated are to be shared as per the norms and rules. They are to be permitted to publish their books and retain the copyright with them and they can receive the royalty. In the case of projects applied through the institute, they have to share the gains with the institute as per the norms and rules. They need to be permitted to utilize the leave at credit to undergo advanced courses.

#### *4.1.6. In the next 30 years*

Now many of the outstanding faculty will have received international awards, and recognitions, and received leadership for professional organizations. He has to be committed to continue to grow and share their expertise with other institutions. Their advanced programs would invite many collaborations with other institutions. They have to be permitted to grow further

without any restrictions. They have to be nominated to international organizations for rewards based on their accomplishments. Their outstanding performance will add to the reputation of the institute. Their contribution to the knowledge capital and human capital will assist the growth of regional competitiveness and economy. Normally every institute is supposed to follow all ethical methods right from selection to retirement diligently but many toxic groups grow like weeds and parasites with the active support of toxic leaders who were recruited with the support of unprincipled politicians. If these unethical practices are to be eradicated, then only one can facilitate the growth of knowledge and human capital.

#### *4.1.7. Role of the Ministry of Education*

The Ministry of Education has complete responsibility for funding the faculty development. If the funds are limited, it can fund 50%, 30% from the management of the institutions, and 20% from the faculty members. Whenever the sponsored faculty members are denied relief to join international faculty development programs by the toxic administrators, it should intervene and arrange to get relief and the toxic leaders have to be changed as per the conduct law. If well-performing faculty members are denied sending proposals for research and development projects under various International Development Agencies, the Board of Governors should conduct an inquiry and resolve the obstructions. The Board should get feedback from the faculty members and resolve the bottlenecks. The Ministry of Education should control the discrimination by upper caste leaders and administrators.

### *4.2. Priority Decisions based on the Norms, Acts, Rules, and Laws*

All autonomous institutes are developed to be one of the institutes of national importance in their field of excellence. They have been granted academic autonomy, administrative autonomy, and financial autonomy for making quick decisions in developing appropriate cutting-edge programs. All the teaching posts are to be advertised as All-India posts and the required qualifications and experience are prescribed by the Board of Governors and approved by the Ministry of Education. Substantial amounts of funds are granted by the Ministry of Education. Further, these Institutes are advised to generate needed further funds through internal revenue generation. The Ministry appoints experts to select the faculty members through open interviews. The director of the institute calls for applications through national advertisement. However, many toxic directors alter the accomplishments of the best candidates or advise the experts not to select the best candidate. Most of the experts are consortium members and not interested in following the prescribed rules and regulations but select poor candidates. The best candidates also file writ petitions in the honorable High Courts but only a few cases are disposed of within a short time but many go beyond the tenure of the selected candidates and get dismissed. Such practices destroy the growth of knowledge and human capital. The New Educational Policy 2020 curbs such malpractices and advises following the rules, regulations, and standards prescribed for the selection of the best candidates.

### *4.3. Critical Success Factors*

Best-performing institutes throughout the world have adopted many success factors to scaffold the best-performing faculty teams. From a focus on these institutes, the following factors are identified as critical success factors for dealing with high-performing faculty members in any higher education:

- Selecting the best and most well-accomplished faculty members with excellent character and conduct but never on caste system
- Honoring the pay scale fixed by the government

- Sanctioning the leave at credit for pursuing needed advanced courses
- Sharing the project gains with the project faculty and staff as per the norms and rules
- Circulating the ministry's letters to faculty members
- Filling the deans' posts as per the norms and rules
- Granting a pension to the faculty member as per the norms and rules
- Reimbursing the cost of the laptop and granting funds to share the internet rent as per the rules and norms
- Permitting a faculty to plan interdisciplinary graduate, postgraduate, and doctoral programs
- Offering counseling, coaching, and mentoring services
- Approving to plan of national and international seminars and conferences for sharing the outcomes of research
- Permitting the well-accomplished faculty members to collaborate with International Development Agencies (IDAs) to bid for consultancy projects and programs
- Approving to plan for continuing education programs for employees of government and private departments
- Permitting to cooperate with other professional development institutions of other ministries
- Permitting the production of learning packages based on the advances in technology
- Approving the planning of diverse global faculty development programs under various ministries and international development agencies
- Decentralization of administration at the department level
- Empowering the departments to utilize the project gains to improve the department facilities
- Rewarding best perming faculty members
- Establishing an Academic Council to review the planned programs and conduct audits on the finished programs and projects
- Conduct leadership and management programs
- Establishing grievance redressal units
- Sustaining linkages with research organizations, IDAs, global universities, and professional organizations
- Controlling informal organizations
- Encouraging the generation of funds using space and resources

These factors have to be included in the service and recruitment rules of the institutes of higher education.

### *4.4. Linking Program Outcomes with Faculty Success Factors*

Program outcomes are to be identified based on the human resource needs of employers, government departments, entrepreneurs, research organizations, and entrepreneurs. There should be an appropriate policy to guide the members of the governing council. Further, there is a need to audit the outcome and correct the process.

- Selection of faculty based on their excellent accomplishment, dedication, and achievement motivation but never on the caste system
- Supporting linkages to global universities in planning cooperative research and development programs
- Academic audit of all completed projects and resolving all obstructions
- Assisting the faculty teams to plan for development programs under various national and international clients
- Rewarding and recognizing the accomplishments of the project teams

- Maintaining the correct account on the funds generated and the expenditures met
- Delegation of authority to choose the qualified and competent adjunct faculty members from universities and national laboratories
- Protecting the intellectual properties generated

Periodically additional rules and regulations are to be identified and included in the vision and mission of the institutes.

### *4.5. Desired Educational Ecosystem*

Educational ecosystems are the process of including methods to institutionalize National Education Policies, various norms, and developing standards. The governing council has to focus on the desired educational ecosystem. The following educational ecosystem has been identified based on the identified defaults:

- Appreciative and supportive leadership
- Scaffolding high-performing and achievement faculty teams
- Friendly and cultured mentors
- Supportive academic and administrative environment
- Decentralized autonomy with accountability to rules and regulation
- Give faculty more autonomy
- Make freedom an office essential
- Provide flexible working
- Offer tangible rewards
- Reward the teams
- Reward them consistently
- Introduce a culture of acknowledgment
- Introduce institute-wide recognition
- Ensure an environment for innovation
- Empower your faculty to be self-fulled and purpose-driven
- Promote social interaction
- Empowered high-performing faculty to innovate
- Availability of adequate project-specific resources
- Well-performing technical support staff
- Excellent interpersonal relationships
- Adequate advanced training for administrators and leaders
- Provide opportunities for advancement
- Reward innovation with responsibility
- Ask your well-performing team what they want
- Continuous transformation development
- Creating ergonomic workplace
- Supporting excellent interpersonal relationships
- Continuously upgrading the tools, equipment, and software

- No discrimination based on caste, community, religion, language, gender, and social status
- Always following ethics, equity, integrity, humility, and excellent culture
- Establishing a strategic plan for development
- Sanctioning the pay scale without any reduction
- Never stopping the candidate from implementing the awarded project
- Never reducing the travel grant to a faculty member
- Never stopping the eligible leave to prosecute any advanced program
- Always following the Ministry's norms in extending the job for outstanding faculty members
- Never stopping the publication or participation in international conferences
- Always extending digital technology-based resources like Multimedia learning Packages (MMLP), Internet, latest software, hardware, scanners, photocopiers, color printers, etc.
- Never mutilating the achievements of the outstanding candidates in the comparative statements that are to be placed before a selection committee
- Never advise experts not to select the best candidate
- Never adopt a cocktail model for administration
- Never demand a bribe for selection
- Specifying the intended goals for achievement
- Following the radical innovation methods to develop new programs
- Recruit diverse faculty members
- Periodically conducting academic audits to identify the faults in planning and correction
- Follow shared leadership, be flexible in identifying various faculty members on campus with relevant expertise, and allow multiple perspectives for decision-making
- Provide incentives for increased citations, PhD productivity, increased grant funding, and increased publication

The educational ecosystem should be flexible and should be continuously improved based on new developments. The leaders should have a vision to reach excellence through their faculty members. Mere multistorey buildings will not yield excellence. Nurtured faculty members can use the resources to bring excellence.

### *4.6. Followup of Outstanding Outcomes*

Many institutions wanted to take up desired follow-ups to continue to develop outstanding faculty members. Sometimes when new external leaders take up administration, they have to be convinced. Many times the grants-in-aid may not be enough to modernize the resources and recruit new faculty members. Only a few institutions have sufficient corpus funds that are carefully maintained and continuously added from project gains. Many outstanding faculty members may leave the institution when they get excellent opportunities for career development. During the redesign of the departments, many existing departments may have to be redesigned and merged with other departments. When disruptive technologies outgrow the abilities of human resources, the project's leaders may face a tougher environment to bid on new projects under various companies. However, the institute has to plan to manage vulnerability, uncertainty, complexity, and ambiguity. The research assistants and middle-level faculty members have to be nurtured continuously in the ongoing complex projects and scaffolded to acquire advanced cognitive abilities. Under safe environments, the institute has to continue to develop to reach excellence.

Based on the success of the previous projects, the outstanding faculty members have to bid for many projects in related areas. Change is constant and the administrators have to plan institutional development to improve the reputation.

### *4.7. Celebrations on Outstanding Success*

The project faculty have to be rewarded for their outstanding performance. They need recognition by including their performance in the Board's agenda. The institute can brief the press on the success. This will attract the local companies to seek the institute's service. Also, many new faculty members will be joining when they get an opportunity. Some of the project members can seek to be added as emeritus faculty when they retire. Some of the alumni may also wish to undertake postgraduate and doctoral programs.

### *4.8. Scaffolding the Best-Performing Faculty Teams to Reach Excellence*

Most of the best-performing faculty teams need many assistance from developing proposals to create outstanding programs. Many may need appropriate resources and trained team members. The leaders could assist them by including a few adjunct faculty members who have achieved success in solving complex problems. They may also need additional resources to supplement the existing resources. They may need total focus on the ongoing projects and programs. Scaffolding the project teams will guide them to solve the bottlenecks and overcome restrictions. They need appreciation for their efforts. The leaders have to follow these simple strategies to bring flawless achievement.

## V. Validation

The results were discussed with the following institutions:

1. Affiliated State Government Engineering Colleges (SGEC)-2
2. Autonomous Engineering Colleges (PAEC)-3
3. Private Deemed Universities in Engineering (DUEE)-2
4. Private Autonomous Engineering Colleges (PEC)-2
5. World Bank Project -assisted Project Institutions (WBAPI) -3

| Issues | Affiliated State Government Engineering Colleges (2) | Autonomous Government Engineering Collges (3) | Private Deemed Universities in Engineering (2) | Private Autonomous Engineering Colleges (2) | World Bank Project Assisted Engineering Colleges |
|---|---|---|---|---|---|
| **Improving Interpersonal Relationships** | Average | Moderate | Maximum | Moderate | Maximum |
| ***Priority Decisions based on the Norms, Acts, and Laws*** | Maximum | Moderate | Moderate | Above Moderate | Maximum |
| ***Critical Success Factors*** | Maximum | Above Average | Above Moderate | Above Moderate | Maximum |
| ***Linking Program Outcomes with Faculty Success Factors*** | Maximum | Maximum | Maximum | Above Moderate | Maximum |
| ***Desired Educational Ecosystems*** | Maximum | Above Moderate | Planning to reach Maximum | Moderate | Maximum |
| ***Followup of Outstanding Outcomes*** | Moderate | Maximum | Maximum | Above Moderate | Maximum |
| ***Celebrations on the Outstanding Success*** | Minimum | Average | Maximum | Above Moderate | Moderate |
| ***Scafollding the Best Performing Faculty Teams*** | Moderate | Above moderate | Maximum | Above Moderate | Maximum |

**Table 1.** Validated Results (Qualitative)

**Rating Details:**

- **Average: 50% success:** It means that the institute leaders have accepted and started training the faculty and adding additional resources.
- **Moderate: 60% success**: The leaders have planned new faculty development programs and started trial programs in the institute's development.
- **Above Moderate: 75% success:** A few initiatives have been instituted and when the growth is visible, additional activities will be approved.
- **Planning to reach a maximum of 80% success**: Almost all the outstanding faculty members have started planning industry-specific programs and won one or two consultancy projects.

- **Maximum of 85 to 90 % success:** Almost all the branches have absorbed the development processes and completed a few projects successfully.

Any change in established procedures may take a long time to modify the service and Recruitment Rules of the institutes and create funds, and procedures.

## VI. Discussion

All the government and government-aided institutes have been established to prepare outstanding graduates and develop appropriate graduate, postgraduate, and doctoral programs to meet the needs of employers. No rule favors toxic leaders who can make discrete decisions to destroy the outstanding faculty teams. Unfortunately, many toxic leaders can get coveted posts due to many political interventions. Hence, to accelerate the growth of the institutes, necessary interventions are required. First, the Ministry of Education has to watch the growth, faculty recruitment, faculty development, planning of high-quality programs, and more return on investment due to effective services offered by the faculty members. Next comes the Board of Governors. They have sufficient authority to fix norms, rules, and standards. Further, the Board has to periodically get feedback from all faculty members on the decisions taken on issues without deviating from various standards. Many toxic leaders have managed to destroy the culture, reputation, and contributions of the well-performing faculty members. Hence it becomes essential to propose the following steps to improve the culture, integrity, ethics, equity, humility, and outstanding culture in the institutions.

1. Improving interpersonal relations among the faculty members and the administration for the planned growth of the faculty members of the institution.
2. Taking priority decisions based on the norms, rules, laws, and standards.
3. Identifying the Critical Success Factors and Implementing them
4. Linking Program Outcomes with the success of the faculty members
5. Creating a Desired Educational System
6. Followup of Outstanding Outcomes by the Institute
7. Celebration of Outstanding Outcomes
8. Scaffolding Outstanding faculty teams
9. Every Institute has to validate the development process and, if needed upgrade them periodically

## VII. Ultimate Goal

The ultimate goal is to create outstanding engineering institutes, nurture the faculty members, develop outstanding programs, and assist in developing knowledge capital, and human capital. The growth of the economy depends on the indigenous human resources to supply graduates with needed attributes. The toxic leaders have to be eliminated otherwise there will not be any return on investment in engineering colleges.

## VIII. Conclusion

India is growing fast and higher education graduates are needed to contribute to the growth of human and knowledge capital. Even though the government of India is continuously upgrading the educational system, the toxic leaders who have very low

cognitive abilities have managed to reach CEO ranks (principals, deans, directors, and vice-chancellors positions through many shortcuts. They only focus on their growth and discriminate against the high-performing faculty members. There is a need for investigations into the discrimination meted out to outstanding candidates. This shortcut growth of the toxic leaders and their coteries has to be completely eradicated. Only the well-performing candidates can develop outstanding graduate and postgraduate programs, and interdisciplinary research and development programs and offer outstanding services to the industries in India. This research has focused on the identification of discrimination and the root causes for the growth of toxic leaders. The poor board members could not eradicate the growth of toxic leaders. The nine-step model can be effectively adopted to facilitate the growth of Indian engineering institutions and more return on investments.

### *8.1. Limitations of the Present Study*

The present study covered the Southern region of India and focused on engineering faculty members only. The culture of these institutions varies from each state. The institutions of national importance were not included in this study. The goal is to retain the best-performing faculty members who have dedicated their whole time to developing high-performing institutions and contributing to human and knowledge capital. The suggested focus is on induction and exit. However, the best can be inducted into emeritus professors.

### *8.2. Suggestions for Future Study*

It is suggested to undertake in-depth focused studies on all other institutions so that one can plan to develop and retain the best performers. Many universities have achieved such a development process and the best models can be incorporated for others to follow. Many transnational companies have innovated in developing best-performing managers and executives. One can study and suggest such tested methods in education.

## References


- AAUP. Changing Practices in Faculty Evaluation. https://www.aaup.org/article/changing-practices-faculty-evaluation
- Alfie Kokn. (1993). Why Incentive Plans Cannot Work? Harvard Business Review. https://hbr.org/1993/09/why-incentive-plans-cannot-work
- Baldridge, J.V., Curtis, D.V., Ecker, G.P., and Rrley, G.L. (2000). Alternative Models of Governance in Higher Education. In M.C. Brown II (Ed). Organization and Governance in Higher Education, 5th Ed, pp:128-142. Boston: Pearson Custom
- Becher, T. (1989). Academic tribes and Territories: Intellectual Inquiry and the Culture of the Disciplines. Bury St Edmunds, UK: Society for Research into Higher Education, Open University Press
- Bensimon, E.M. (1991). The Meaning of "Good Presidential Leadership": A Frame Analysis. In Peterson, M.W. (Ed). Organization and Governance in Higher Education. 4th ed. pp:421-431. Needham Heights, M.A: Simon and Schuster and Custom Publishing
- Bennett University. (2023). Benefits of Faculty Development Programs
- Borland, K. W. (2003). The relationship between Faculty and Academic Administration in Governance Functions. In M. T. Miller and Caplow, J. (Eds).Policy and University Faculty Governance, pp: 85-94, Greenwich, C.T: Information Age
- Brookings. (2020). The banality of racism in education. https://brookings.edu/aticles/the-benalty-of-racism-in-education.

- CareerConnect. (2015). Mentoring Guide. https://cd.2.sph.harvard.edu/wp-content/updates/31/2015/10/Mentoring_Guide.pdf
- Carr, P.B and Walton, G.M, (2014) Cues of Working together Fuel Intrinsic Motivation. Journal of Experimental Social Psychology, 53(14): 169-184
- Del Farvero, M. (2003). Faculty-Administrator Relationships as Integral to High-Performing Governance System: New Frameworks for Study. American Behavioral Scientist, 46(7): 902-922
- Delhi Institute of Advanced Studies. (2020). Faculty Motivation: A Concern for Technical Institution. https://dias.ac.in/wp-content/updates/2020/03/17-23_Faculty-Motivation
- Dill, D.D., and Helm. K.P. (1988). Faculty Participation in Strategic Policy Making. Higher Education Handbook of Theory and Research.IV, 319-355.
- Engagement Culture. Intrinsic vs. Extrinsic Rewards to Improve Employee Engagement
- Evolution.com. (2016). Improving the Ties between Faculty and Administration. https://eltvolution.com/managing-institution/operations_efficiency/improving-the-ties-between-faculty-and-administration
- Green, B.N. and Johnson, J.C. (2015). Interprofessional Collaboration in Research, Education, and Clinical Practice: Working Together for a Better Future. Journal of Chiropractic Education. 1: 1-9.
- Guba, E.G. and Lincoln. Y.S. (1994). Competing Paradigm in Qualitative Research. In N.K Denzin and Y.S. Lincoln (Eds). Handbook of Qualitative Research (pp:105-117) Sage, https://journals.sagepub.com/doi/full/10.1177/160940691562140 6
- Guffey, J.S. and Rampp, L.C. (1998). Shared Governance: Balancing the Euphoria. (ERIC Document Reproduction Service No.ED418617)
- iEduNote. Organizational Performance: Definition, Factors, Model. https://www.iedunote.com/organizational-performance
- Jeffrey S. Russell. (2006). Mentoring in Engineering. Leadership and Management in Engineering, January 2006, pp: 34-37. https://ascelebrary.org/doi/10.1061/(ASCE)1532-678/9(2006)6:1(34)
- Joel Trammell. (2015). What are the Right Criteria for Selecting a new CEO? https://www.forbes.com/sites/joeltrammell/2015/02/09/
- John Tierney. (2012). Why do so many teachers quit their jobs? Because they hate their bosses. https://theatlantic.com/national/archieve/2012/11/why-do-so-many-teachers-quit-their-jobs
- Jonathan Grant. Academic Incentives and Research Impact: Developing Reward and Recognition System to Better People's Lives. https://academichealth/sites/default/files/publication/%5Bfield_date:custom:Y%5D_%5Bfield
- Kezar, Adrianna, J., and Elizabeth M. Holcombe. (2007) Shared Leadership in Higher Education: Important Lessons from Research and Practice. Washinton, DC: American Council on Education
- O'Neil, T.A., and M.J. Mclarnon. (2018) Optimizing Team Conflict Dynamics for High-Performance Teamwork. Human Resource Management Review. 28:378-394
- Ram Charan. (2016). The Secrets of Great CEO Selection. Harvard Business Review. https://hbr.org/2016/12/the-secrets-of-grat-ceo-selection
- Research Gate. (2020). A Critical Review on Occupational Stress Factors Affecting Faculty. https://researchgate.net/publication/341110079_A_Critical_Review_on_Occupational_Stress_Factors_Affecting_Faculty
- Mraia Olenick, Monica Flowers, Tatayana Maltseva, and Diez-Sampedro. (2019). Research in Academia: Creating and Maintaining High-Performance Research Teams. Hindawi.com. https://doi.org/10.1155/2019/8423 60.

- Marjetta Del Favero, and Nathaniel.The Faculty-Administrator Relationship: Partners inProspective Governance? A Journal for the Cholar-Practitioner Leader. 3(1):53-72
- Matthew Lippincott. (2017). Want high-performing teams? Invest in Coaching and Mentoring. https://www.keystepmedia.com/authors/matthew-lippincott
- Nicole Torres. (2015). Financial Rewards Make People Suggest Fewer but Better Ideas. Harvard Business Review. https://hbr.org/2015/02/financial-rewards=make-people-suggest-fewer-but-better-ideas
- Nourhan Mohamed Younis, Raniah Abd Elmoniem Shamah, Heba Elsayed Elbadawy. (2021). Conceptual Framework of Toxic Leadership.
- Rice, R.E., and Austin, A.E. (1988). High Faculty Morale: What Exemplary Colleges Do Right. Change, 20(2):50-58
- ScienceDirect. Changing Paradigms of Engineering Education. https://www.sciencedirect.com/science/articles/1877050920313570
- Success Factory. Reward Innovation with Responsibility. https://thesuccessfactory.co.uk/blog/11-ideas-for-rewarding-innovations-in-workplace
- Susan D. DeWoody. (2016). The Relationship between Servant Leadership and Faculty Satisfaction among Faculty Members in the Council of Independent Colleges, Ed.D Thesis, Dallas Baptist University
- Ted Jackson. Key Performance Indicators for Schools and Educational Management. https://www.clearpointsstrategy.com/key-performance
- Ted Jackson. 18Key Performance Indicator (KPI) Examples Defined. https://www.clearpointsstrategy.com/18-key-performance
- Tekleab. A. and Quigley. N.R. (2014). Team Deep-level Diversity, Relationship Conflict, and Team Members' Affective Reactions: A Cross-Level Investigation. Journal of Business Research.67(3): 394-408.
- Tern Glvens. (2018). The Collaboration Imperative. https://www.insidehighered.com/sites/default/server_files/media/iStok-493280648.jpg
- Tierney, W.G. (1998). The Responsive University: Restructuring for High Performance. Baltimore: The John Hopkins University Press
- Thanikachalam Vedhathiri. (2023).Role of Leadership with Equity, Integrity, Ethics, Humility, and Outstanding Culture in the Development of Engineering Institutions. https://doi.org/10.32388/T4FPO3
- Thanikachalam Vedhathiri. (2023). Planning Courses on Ethics in Engineering Curricula. https://doi.org/10.32388/AS32388/AS3BHA
- Thanikachalam Vedhathiri. (2023). Developing and Supporting High-Performing Faculty Teams in Engineering Institutions. https://doi.org/10.32388/YYYDM3
- Thanikachalam Vedhathiri. (2023). Creating Sustainable and Outstanding Institutional Culture in Engineering Education in India to Develop High-Performing Institutions. https://doi.org/10.32388/1S9QB6
- Thanikachalam Vedhathiri. (2023). Strategies to Resolve Toxic Leadership Actions in Engineering Institutions which Impede Faculty Performance and Innovation. https://doi.org/10.32388/21DW50
- The Guardian. (2019). Racism in universities is a systemic problem. https://www.theguardian.com/education/2019/oct/23/racism-in-universities.
- The World Economic Forum. (2023). 3 vital steps for uprooting racism on university campuses. https://www.weforum.org/agenda/2021/09/racism-university-higher-education

- ThoughtCo. (2018). Race and Gender and Discrimination in Higher Education. https://www.thoughtco.com/racial-and-genderbias
- Welsh, J.F., and Metcalf, J. (2003). Fa.Springfield, Il.: Charles C. Thomasculty and Administrative Support for Institutional Effectiveness Activities. Journal of Higher Education. 74(4):445-468
- Westmeyer, P. (1990). Principles of Governance and Administration in Higher Education


## Declarations


**Funding:** No specific funding was received for this work.

**Potential competing interests:** No potential competing interests to declare.