Creating Happy Educational Environment in Engineering Institutions to Sustain Outstanding Performance by Well-Accomplished Faculty Teams Through “Rodeorr” Model

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Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.

Abstract

In this fast-growing world, the need for engineers and technologies improves rapidly. Institutional development is possible only when we recruit outstanding faculty members but they need continuous development to effectively contribute to the human and knowledge capital. Many researchers focused on a few aspects of faculty development. Hence, this research focused on the planned development of the faculty from recruitment to retirement. An empirical model entitled “RODEORR” has been developed with the contribution of 306 faculty members from one state. The model consists of the following seven focused factors: 1. Recruitment based on faculty’s excellence, intrinsic and achievement motivation, 2. Orientation of the newly recruited faculty members to the goals, vision, mission, and objectives of the institute, 3. Continuous focused development of the faculty members based on equity, ethics, integrity, and excellence through in-house faculty development, sponsored global faculty development, and mass open online courses, and allowing self-determined development programs, 4. Continuous evaluation of faculty performances, accomplishments, and innovations, 5. Utilizing the opportunities for growth of the faculty members, 6. Rewards and recognition for the faculty members' outstanding performances and contributions to society, and 7. Assisting safe retirement by paying the pension and other accrued finances. If the outstanding faculty members desire to contribute to

the development of knowledge capital, they can be reemployed as per the Education Ministry's guidelines. The suggestions have been validated through a set of four principals and they accepted the continuous faculty development.

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Keywords: Effective Recruitment, Orientation, Lifelong development, 360-degree evaluation, Cashing opportunities, Rewards and Recognition, and Safe Retirement.

I. Introduction

Creating a happy educational environment in engineering, science, and technology is an important aspect of sustaining and facilitating the outstanding performance of well-accomplished faculty teams [1][2]. After getting independence of India, the integration of sustainable development within professional education like engineering, technology, agriculture, horticulture, architecture, etc. educational curricula is needed to motivate and empower faculty members to be immersed in continuous sustainable development-focused engineering practices in analysis, design, development of prototypes, testing, improving, manufacturing, marketing, and maintenance practices. The educational administrators and leaders should facilitate the establishment of an academic environment centered on equity, integrity, ethics, humility, and outstanding culture in higher education institutions from affiliated colleges, autonomous colleges, and state professional universities, deemed to be universities, to institutes of national importance. Institutional achievement is facilitated by several factors, specifically high-performing faculty teams and graduates with needed attributes. All these human resources with high levels of happiness will enable high productivity and the smoothness of tasks performed. Since faculty members spend most of their day working in the laboratories, workshops, libraries, and classrooms, it is obvious that the institute's environment will affect the faculty members' emotional well-being

Creating a Happy Education Environment: It is essential to focus on the following aspects: servant leadership, equity, integrity, ethics, humility, and an outstanding supportive culture in the development of professional institutions. Further, there is a need for decentralization, empowerment of high-performing faculty teams to develop outcome-based curricula, instructional resources, scaffolding the faculty member, counseling, coaching, mentoring, providing necessary resources, technical support staff, modern tools, software, 24x7 access to the library, research laboratories, approving the inclusion of adjunct faculty members from outstanding universities, national laboratories, industry established product development

centers, and well-recognized emeritus professors. Further, the administrators have to recognize the excellent achievements, and award certificates and include them in the service registers. In addition, there are many shortcomings in creating a happy educational environment in many engineering institutions which are needed to sustain the outstanding performance of well-accomplished faculty teams. This research is centered around these initiatives. Educational leaders who have the motivation to listen and think about the career path of the faculty members are found to highly influence their faculty teams' happiness in the institution (Khairunnesa Isa, et al, 2019) [3].

Ergonomic Work Place Design: Faculty members need an ergonomically designed workplace with proper tables, chairs, storage facilities, lighting facilities, 24x7 internet connections, and a protected workplace. They need well-maintained restrooms. The faculty rooms should be noise-free, with cell phone charging points, and coffee vending machines. Many faculty members need a campus transport system and vehicle parking space. Further, they need a bookstore, printers, and photocopiers.

Interpersonal Relations in the Work Place: They need proper interpersonal relationships in the workplace, counselor, coach, and mentor. They can be inducted into focused training programs in counseling, coaching, and mentoring of students as well as junior faculty members. They can tracer studies to get reliable feedback from the alumni of the college and the employers of the graduates of the institute.

Social Interactions: This is needed to maintain good communication among fellow faculty members, office staff, technical support staff, graduate teaching assistants, and chairpersons. They need appreciative Inquiries from the chairperson and project coordinators. Sometimes they need to share common resources of the department that should be available. During experimental work, they may need support services.

Short-term Leadership Positions: Many faculty members will have multiple skills apart from their academic area of specialization. They can be included in activities like planning seminars, conducting in-house faculty development programs, editing annual reports, preparing proposals for research funds, conducting industrial visits, undertaking employee development programs, planning state-level seminars, national and international conferences, open house programs, workshops for newly recruited faculty members, and student orientation programs. All these will encourage the faculty members to contribute to the planned activities.

Recognitions and Rewards for Achievements: The leaders of the institute have to recognize and reward the faculty members for their outstanding achievements like getting awards for their published textbooks, drawing manuals, laboratory manuals, best paper published in national conferences and international conferences, getting elected to Academic Council of the University, getting Internships in a global university, getting fellowships in National Scientific Associations, International Professional Associations, completing professional training and development programs in advanced areas. Their contributions could be presented at the Board Meetings of the governing council, annual reports, and monthly newsletters. These will encourage many other budding faculty members to achieve and contribute to the knowledge capital. Without outstanding contributions, accomplishments, and efficient services to companies, institutes can't be developed. These recognitions and rewards will bring more reputation to the whole institution and attract outstanding young faculty members.

“RODEORR” MODEL: This model consists of the following seven factors: 1. Recruiting based on Excellence, 2. Orientation based on ethics, 3. Development based on Equity, 4. Evaluation- Unbiased, and 360 Degree Focus, 5. Opportunities-Proactive Nomination and Scaffolding, 6. Rewards based on the Outstanding Contribution, 7. Retirement-Paying Pension and other Accrued Savings

II. Objectives

The following objectives are identified for this research work.

1. Identify the factors that create happiness in higher educational institutes that facilitate happiness in high-performing faculty teams in engineering institutions.
2. Develop an empirical model of continuous faculty improvement from recruitment to retirement.
3. Suggest a set of principles to improve the happiness of the intrinsically motivated and newly recruited faculty members to contribute to knowledge capital in Indian engineering colleges.
4. Validate the suggestions and get feedback on the problems faced by the institutions in piloting the suggestions.

III. Literature Survey

3.1.

Happiness has been termed as a positive emotion by psychologists. Workplace happiness is due to administrative strategies, vision, mission, goals, rules, and regulations made by the Board of Governors, and the Ministry of Education. High-performing faculty members who are completing their programs and projects successfully well before the deadline are happy. Also, when they bring substantial income through completing challenging global projects under various international development agencies, they create happiness in many developing countries. When they trained and developed hundreds of diverse global faculty members, they contributed to borderless happiness in low-income countries. Happiness is unlimited as long as they are facilitated and scaffolded to efficiently achieve these projects. Their happiness is linked to the goals, vision, and mission of the engineering institutes.

Ritu Gandhi Arora (2019) [4]. concluded that except for work-life balance, research activities, and working environment, all other factors are available to academicians according to the ranked importance assigned to them**.** Dang, Puneet Basur, and Smiriti (2019) [5]. linked situational leadership style, employee engagement, and stay. Nphat Wattaphan (2020) [6] identified five principles factors consisting of personal characteristics factors, managing factors, organizational factors, and relationship factors for faculty engagement. Laura, Stearn, Martinez, and Laurila (2017) [7] found that conflicts within faculty roles and other aspects of university operations influence the effectiveness of increasing research activity. According to Khairrunesa Isa, Siti Solehah Tenah, Asliaty Atim, and Nor Aishah Mat Jam (2019), organizational achievement is determined by some factors, particularly human resources. Human resources with high levels of

happiness will affect productivity and smoothness of tasks in an organization, organizational environment will affect employees' well-being. Piyu (2019) [8] defined a learning organization as built within the organization structure where employees are continuously developed to improve their capacities to handle business situations. It is centered on structure. Employees learn by training and are facilitated by the organization. Managers' responsibility is to develop subordinates. All these are focused on processes and purposes. In higher education institutions, the faculty members are to be continuously developed to meet the demands fast growing industries.

3.2. Professional Social Responsibility in Engineering

According to Angela Bielefeld (2018) [9] social responsibilities of the engineering profession are in the analysis of engineering codes of ethics and educational requirements, human safety, and environmental protection in engineering designs. Engineering ethics code text related to diversity; the dignity of all faculty members is to be respected. Treat faculty members without discrimination, without bias in respect of race, religion, gender, age, marital or family status, national origin, etc. Further, it includes supporting and encouraging diversity and promoting diversity in engineering leadership. Never tolerate harassment, treat all colleagues and co-workers fairly and respectfully, and recognize their contributions and capabilities by fostering an environment of equity, diversity, and inclusion. Sven Horak and Yuliani Suseno (2022) [10] found that informal barriers in the workplace, as they tend to socially exclude women limiting possibilities for their participation and career progression. Informal networks present an ethical issue in the workplace since they are embedded and there is a complex interplay between informal networks and informal institutions. Multinational Companies (MNCs) in Korea provide a more supportive environment for women at work and gender equality policies. Mahzarin Banaji, Susan Fiske, and Douglas Massey (2021) [11] concluded that systematic racism is a scientifically tractable phenomenon, urgent for cognitive scientists to address. It undermines life opportunities and outcomes by racial category with a focus on challenges to other communities in India. Hari Bapuji (2015) [12] has found that high levels of economic inequality adversely affect individuals and affect organizational performance via human development in society. Karan Tonso (2006)[13] concluded that some manage to produce excellent engineering results, while others are fabricated. Some interactions in some teams are respectful, while on other teams' others expect others to carry the load, but take credit for it later. He created a model for effective teamwork to produce high-quality engineering products and do so through respectful social interactions. Implications for teaching about teamwork, teaching with teams, and thinking about ways to change campus cultures to better promote design engineering were developed by Karen Tonso [13]. According to Claudia da Rocha Brito, et al. (2013)[14] working environment of engineering colleges demands training engineers with tools that enable them to act in a working environment that demands a very flexible and innovative mind to be inserted in and to keep up with the work market. India is assisting many Asian, African, Central, and South American countries by offering diverse global training programs. It should bring happiness to the Ministry of External Affairs, Ministry of Finance, Indian Council for Cultural Relations (ICCR) who are funding the programs.

3.3. Strategies, Models, Guidelines, and Policies for Creating Happiness in an Engineering Institution

Thanikachalam. V. (2023) [15][16][17][18][19][20][21][22][23][24] developed a model for art and science of creating high-

performing faculty members and retaining them in Indian engineering institutions. he established the need to eliminate the toxic leaders who indulged in all kinds of discrimination. He also developed a series of effective methods of facilitating outstanding engineering faculty members through faculty training from recruitment to retirement. The engineering institutes have to undertake executive development programs that will bring linkages with the corporates in the state. The leaders have to create smart goals of engineering education in the fast-developing countries. To achieve excellence in all research and development activities, institutional leaders should focus on equity, integrity, ethics, humility, and outstanding culture in engineering institutions. Further, the Board of Governors has to develop needed support for high-performing faculty teams in all engineering institutions. The Ministry of Education, the Department of Higher Education, state technical universities, the All-India Council for Technical Education, and governing councils of autonomous institutions should create a sustainable and outstanding culture in engineering education to scaffold the high-performing faculty teams. The Ministry of Education has to adopt effective and efficient strategies to resolve toxic leadership actions that impede faculty performances and innovations. Every engineering institute should develop courses on ethics in all engineering programs. There is a need to create a happy educational environment that is cost-effective and efficient and facilitates the overall growth of the faculty at all cadres.

3.4. Workplace Happiness for Faculty Members

Dharmesh, et al. (2021) [25] concluded that to sustain a competitive advantage in today's business environment, management of the university setup has become one of the most challenging elements to consider. To sustain a competitive advantage, highly skilled faculty members who are perfectly aligned and motivated in the institute are essential. However, happiness becomes essential for faculty members. According to him, factors that contribute to happiness are life satisfaction, interpersonal relationships, self-affirmation, and physical and mental health. According to Nasreen Awada (2020) [26], the United Arab Emirates (UAE) government has established a national program for happiness and well-being. Happiness at the workplace includes work engagement, job satisfaction, and effective organizational commitment. Sae-hoon Lee, et al. (2023) [4] concluded that their results showed a positive impact of innovativeness in entrepreneurial orientation on college competitiveness, and risk-taking and risk-taking in entrepreneurial orientation and organizational commitment. orientation on both college competitiveness. They recommended that institutions adopt holistic plans of action across the following domains: Strategy, Equity, Approach, Evaluation, and Culture. Under culture, they evaluated to what extent is evidence-based teaching celebrated, particularly when the champion needed reforms and inspired other faculty to act. When others deeply understand the impact of new pedagogical approaches and their connections to equity, a campus-wide commitment to excellence can be held. The holistic approach is designed by them to help administrators and faculty create the cultural, professional, and employment conditions necessary to prioritize and celebrate faculty, with policies and programs that center teaching and learning. Jonathan Gyurko (2021) [27] stated that to sustain a culture of excellence in instruction through communities of practice within and across institutions to share best practices. Students have to collaborate with advisors, orientation workers, outreach workers, and other student affairs staff to align corequisite supports.

3.5. Interpersonal Relations in the Department

A front-end analysis recommends appropriate interpersonal relations in the institute, on-the-job training, industrial exposures, and project work. They need to cultivate proper relations to understand the complications. In most situations, the employees have acquired the needed skills and attitudes to perform safely on the shop floor. Exposure to their skills will assist the students to practice successfully on the shop floor.

3.6. Sharing Common Resources

Not all the laboratories will be equipped with up-to-date equipment, tools, recorders, and consumables. Hence, there should be an appropriate policy to share the resources that are needed to carry out investigations. Even some times, one has to share the tools, equipment, and consumables from other institutes. This demands effective cooperation and collaboration with other departments and institutions.

3.7. Synthesis of Recommendations of the above Researchers

- Workplace happiness is due to administrative strategies, institutional vision, mission, goals, rules, and regulations.
- Completing the programs and projects well before deadlines. This requires decentralization, delegation, resources, staff, funds, policies, conflict resolutions, and granting rewards for completion.
- Happiness is also linked to good interpersonal relationships in the institute.
- Risk-taking abilities of the project leaders
- Servant leaders of the department and the institute
- Permission to use the needed resources of other departments and institutes
- Cooperation and collaboration among various departments and institutes
- Sharing the best practices among the faculty teams
- Free from discrimination of the faculty members
- Encouragement for diverse faculty teams
- Providing on-the-job training as and when needed

IV. Research Methodology

The research methodology is based on the social science approach developed by Eigen Guba and Lincoln (1994)[28] . Questions relating to expected happiness will be developed, validated, and administered. The purposely selected research participants will be responding to the 53 questions. Their response will be analyzed and synthesized. A happy environment will be developed and validated through a set of three institutions.

4.1. Population

Newly recruited faculty members who have minimum postgraduate degrees in engineering/ technology, aged 28 to 35 years, and working in engineering departments. Middle-level faculty members with Ph.D. degrees, aged 35 to 45 years, and working as Associate Professors in engineering/technology departments of government/private engineering colleges, deemed universities, and self-financing engineering colleges.

4.2. Sample

227 male faculty members and 79 female faculty members from Tamil Nadu state were purposely selected. Out of this sample, 126 male members and 58 female members possessed master's degrees in engineering/technology. 101 male and 21 female faculty members have earned Ph.D. degrees in their branches of specialization. 197 are from self-financing engineering colleges, 152 are from the government or government-aided engineering colleges, 46 are from deemed universities, and 21 are from the state technical university.

4.3. Questionnaire

A set of 54 questions was designed in four areas which are considered essential for creating a happy educational environment. Factor 1: Treatment offered to them by the college authorities, Factor 2: Resources provided, Factor 3: Faculty development programs offered, Factor 4: Unbiased 360 Degree Evaluation, Appreciative Inquiry, Proactive Assessment, Factor 5: Academic Autonomy, Delegation, Resources, Funds, Factor 6: Rewards, Recognition, and Facilitation for further development, and Factor 7: Retirement, Sanctioning Pension, Payment of Accrued Savings.

This constitutes a change and development of the "**RODEORR**" model which is based on creating a happy educational environment in engineering institutions.

Factor 1: Recruitment-based on Excellence Accomplishment

Clear Job Description, Job specification, Prescribed Educational Qualifications, Professional Experiences, and accomplishments, Ethical Pay Fixation, Allowances, and Statement of retirement benefits. For all factors, the questions and the feedback are presented in Annexure 1.

1. Whether job descriptions are based on the assigned tasks, program educational objectives, and specified outcomes?
2. Whether the prescribed qualifications are based on cognitive abilities, psychomotor skills, and attitudes.
3. Whether the administrator awarded a pay scale and allowances fixed by the Ministry of Education as advertised by the AICTE [29] /UGC [30]?
4. Whether the administrator specify the retirement benefits in an advertisement?

Factor 2: Orientation-Based on Ethics

The institute's vision, mission, Faculty handbook, designed cubical, Internet Connection, Noise environment, Transport Facilities, Lighting and Ventilation, Detailed Service and Recruitment Rules, Medical Facilities,

Factor 3: Development **based on Equity**, Programs at the state/national level, In-house Faculty Development Courses, MOOCs, Internships, and International Programs.

Factor 4: **Evaluation,** Unbiased, 360 Degree Oriented Evaluation, Appreciative Inquiry, Proactive Assessment

Factor 5: Opportunities, Proactive Nomination, Academic Autonomy, Delegation of needed Authority for Offering Innovative Courses, Diverse Global Faculty Development Programs, Interdisciplinary Postgraduate and Doctoral Programs, Undertaking Complex Projects under International Development Agencies (IDAs), Bidding for Interdisciplinary Consultancy Programs, Publications of Research Articles, Textbooks, Manuals, Monographs, Educational Video Programs, Podcasts, Webinars, and Developing Multi-Media Learning Packages (MMLP), Planning for National and International Conferences and Workshops.

Factor 6: **Rewards and Recognitions** based the Outstanding Accomplishments, and Facilitation for further Development.

Factor 7: Retirement, Pension, Payment of Accrued Saving

4.2. Analysis and Interpretation of The Feedback

The feedback from 306 participants was presented in the Annexure.

The highlights of feedback for **Factor-1: Recruitments** based on excellence are presented in Table 1.

Table 1

No.	Issue	Group Average (%)	Remarks	Follow up
1.1	Inclusion of job description in the advertisement	34.5	Many institutes add many areas not specify advertisement	It is essential to indicate related areas
1.2	Following AICTE Guidelines for recruitment	53.51	The institutes have to follow the AICTE guideline	As the law, they have to follow
1.3	Pay scale awarding as per AICTE guidelines	83.58	Substantially most of the institutes follow the AICTE guidelines	Still, some more has to follow
1.4	Inclusion of retirement benefits in the advertisement	28.27	Only a few institutions follow	To attract the best faculty members, the institute has to include the details of retirement benefits.

Factor-2: Orientation to the newly recruited faculty members

2.1	Organization of orientation courses	69.69	Most of the institutions organize orientation courses	Still, 30% of the institutions have to plan and implement orientation courses
2.2	Faculty Handbook	35.25	Around 65 % of the institutions don't develop and distribute.	The benefits are far more than the investment in preparing a handbook
2.3	Well-designed cubicles	68.46	32% of the institutes need to create well-designed cubicles.	It will be of great use to offer well-designed cubicles for easy work.
2.4	Reliable Internet facility	68.46	Another 32% of the institutes have to offer reliable Internet facilities.	The return on offering a reliable Internet facility is much more than the investment cost.
2.5	Circulation of letters received from the MoE.	76	Another 24% of the institutes have to follow this.	Transparency will bring motivation and faculty can plan needed courses.
2.6	Travel plans	82.77	Most of the institutes approve travel plans as per the norms.	17% of the institutes have to grant travel costs based on their needs.
2.7	Medical Facilities	64.46	Another 36% have to invest in medical facilities to safeguard human resources.	It is essential to establish suitable medical facilities to improve the health of the human resources.
2.8	Transport facilities	64.46	Another 36% have to invest in travel facilities.	The return of transportation will be substantial.
2.9	Faculty Quarters	56.54	Another 44% have to establish appropriate faculty quarters.	Return on rent will compensate for the capital cost. Faculty productivity will increase.
2.10	Sports facilities	90.28	The majority of the institutes have provided needed sports facilities.	Around 10% of the institutes have provided needed sports facilities to improve the physical abilities of the human resources.

Factor-3: Faculty Development

3.1	In-house faculty development courses	79.58	The majority of the institutes offer in-house faculty development programs and improve the performance of their faculty.	Another 10% of the institutes can establish effective and efficient in-house faculty development courses.
3.2	Summer and Winter courses	66.50	Around 33% of the institutes have to approve their faculty to undergo summer/winter school programs.	The return on this expenditure will reflect on the outcomes of the faculty. ISTE reimburses the travel expenditure.
3.3	Permission to undergo AICTE-sponsored courses.	88.5	This will enable the institutes to improve the curriculum, instructional design, evaluation, et.al.	All the time, AICTE will provide travel grants to the faculty members.
3.4	National Training Programs of ISTE	84.80	This enables the faculty members to update their cognitive abilities, industrial exposure, and research skills.	All the time, ISTE reimburses the cost of travel, boarding, and lodging cost.
3.5	Recognition of MOOCs	58.33	During the COVID period, MOOCs were organized for the faculty members.	Now many national MOOC programs are offered by many universities and the institutes can approve the participation in these MOOCs.
3.6	Internships	36.19	International universities offer limited internships.	The institutes have to negotiate and obtain slots for internships.
3.7	Development programs offered by foreign universities	29.66	Under the World Bank, USAID, GTZ, UNESCO, etc. faculty development programs are organized for the faculty.	The institutes have to prepare needed capacity and quality development programs to get faculty development courses.
3.8	National Fellowships	36.93	Outstanding faculty members with very significant outcomes can alone get national fellowships from professional associations.	Institutes could develop postgraduate and doctoral programs so that the faculty can offer outstanding contributions to getting national fellowships.

Factor-4: Evaluation of Faculty Accomplishments and Performances

4.1	Evaluation of Professional Achievement	50.49	Another 50% of the institutes have to evaluate the professional achievement of their faculty members.	This should be based on appreciative inquiry principles. They have to plan to overcome their deficiencies.
4.2	Teaching Performance	63.81	Another 36% of the institutes have to focus on instructional design, delivery and outcome-based classroom activities.	The faculty has to prepare their classroom activities and provide a total plan for the semester, instructional materials, test schedules, and research work.
4.3	Self-development of Professional Growth	43.71	The institute should encourage the planning for professional growth and it should be aligned with the vision of the institute.	There is a need for effective planning of self-growth, guidance from the seniors, and effective mentoring.
4.4	Appreciation of excellent performance	54.49	The leaders have to appreciate the excellent performance of their faculty members.	Appreciation will enforce the achievement motivation. The students and the community will benefit.
4.5	Presentation of performance to the Board of Governors	66.34	This is required to update the accomplishment of the faculty members to the Board of Governors.	The Board has to encourage further accomplishment, services, intellectual products, and contributions to the world.
4.6	Nomination of the outstanding faculty to get National Recognition	83.13	The reputation of the institute will increase when its faculty members are recognized for their outstanding contributions.	There is no expenditure for nomination but the return on institutional investments will be maximum.

Factor-5: Opportunities for the growth of the faculty members and the institute

5.1	Nomination of an outstanding faculty member to an international university	29.17	The Indian institutions have to create linkages with outstanding universities through collaboration for undertaking projects under IDAs. Most of the administrators are not willing to nominate their faculty members.	If the faculty members have achieved excellent performance and also members of various international bodies, then only they can get the opportunity to get an internship.
5.2	Academic autonomy to develop new interdisciplinary postgraduate programs	31.70	Again, the efforts of the outstanding faculty teams are not recognized by the administrators, hence, they don't provide academic autonomy.	Even though the new Indian National Education Policy 2020 suggests interdisciplinary postgraduate programs, most of the institutions have yet to visualize the needs of their needs.
5.3	Supporting to development of a diverse faculty development	32.84	In this globalized economy, only a few institutions ventured to organize diverse global faculty development programs.	Again low score indicates, the lack of mission, and globalization of higher education programs.
5.4	Starting an interdisciplinary Ph.D. program.	32.25	This low score indicates the lack of vision of the administrators.	Many outstanding faculty teams may be interested in planning such interdisciplinary Ph.D. programs but many bottlenecks obstruct their initiatives.
5.5	Approval for undertaking a complex- consultancy project under an International Development Agency.	32.03	The low score reveals the lack of interest in the administration. The institutes have to create a global vision.	Even though many international development agencies are willing to offer complex development projects, many institutions are not willing to approve undertaking projects.
5.6	Approval for bidding on a diverse global faculty development program	37.42	Many IDAs advertise the projects in the newspapers or even send LoIs to many institutions, but the authorities are unwilling to approve the bidding.	There is a need to expose the global needs, and strengths of the outstanding faculty members, their accomplishments, and their fast successes to educational policymakers.
5.7	Approving the publication of a series of research papers in international conferences.	56.70	This is due to the efforts of outstanding faculty teams, their intrinsic motivation, readiness to learn on the job, and self-desired learning.	Many international organizations provide funds for travel and some Indian associations and councils partly fund the faculty.
5.8	Permission to publish a set of learning materials through a reputed publisher.	31.86	There is no loss but books can be published through reputed publishers who are willing to provide royalty.	Many educational administrators have to create institutional policies for publication.
5.9	Approval for developing a series of educational video programs	82.84	This is due to the investments in the hardware. The administrators are willing to approve the productions and show effective utilization.	The young faculty members can be motivated to prepare storyboards for video production and can be trained in the art of production.
5.10	Approval to present webinars to a foreign university	23.24	Many administrators feel that the Ministry has to approve such presentations.	Many don't utilize academic autonomy. Even the best faculty members couldn't present their materials.
5.11	Permission for developing multimedia learning packages (MMLP)	53.75	Many institutions have required hardware and software like Director, Authorware, and Tool Book.	The institutions can undertake the production of employee training using MMLP. This improves the revenue generation.
5.12	Approval for planning and conducting a national conference	64.79	Most of the time, institutes are getting funds to conduct national conferences from various councils.	This can be undertaken to collaborate with industries and other higher education institutions.
5.13	Sanctioning funds to organize an international conference.	28.84	International conferences need approval from the Ministry of Education and the Ministry of External Affairs. They also need funding from various institutions.	Many national councils, organizations, and commissions will certainly amount to funds. These demand the reputation of the institute and its leaders. Not all leaders fund a part of the estimation.
5.14	Planning a summer school for non-resident Indian Graduates based on the funding from the Government.	35.62	Again, many leaders don't plan for global programs, even though a set of faculty members can plan and implement them.	The Chairperson and the Board members need to decide on such government-sponsored schemes.
5.15	Permission to participate in a peripatetic seminar organized by UNESCO	27.78	Many leaders have myopic vision and are willing to permit outstanding faculty members to participate.	The NEP 2020 suggested globalization of higher education programs but there are firm steps to implement.

Factor-6: Rewards and Recognitions

6.1	Rewarding the faculty based on their outstanding accomplishments	54.00	There is a gap in rewarding the outstanding faculty members. The growth of toxic leaders is one of the reasons.	The Board of Governors has to formulate policies on rewarding the best performers.
6.2	Facilitation of the faculty members for further development	62.09	This is a desirable change. The initial success would have created a positive change.	When the institute gets 50% of the project gains from the externally funded projects, this amount could be used for this purpose.
6.3	Recognizing outstanding faculty team in coaching and mentoring a team of postgraduate students	60.62	A few institutes started rewarding the departments when all the students got employment within six months of graduation.	There is a need for institutional policy to strengthen the education programs, placement of the graduates, and improving employability.
6.4	Sanctioning travel funds for conducting technical working group meetings convened by UNESCO	64.71	Almost UNESCO will provide funds for the selected faculty members. Even if a seed fund is granted, it could be repaid by the faculty members.	UNESCO selects outstanding institutions to collaborate to plan and conduct technical working group meetings. Hence, institutes should be recognized through their contributions.
6.5	Approval of technical and financial proposals for bidding to assess the organization-specific skills	31.00	There is a need for training the senior faculty members in the assessment of bid proposals. Only after this activity, institutes can approve the bid proposals.	The art and science of evaluating a project proposal depends on the advanced skills of the faculty teams, their financial models, and internal experiences.

Factor-7: Retirement, Pension, Payment of Accrued Savings

7.1	Settles the pension payment on the day of retirement	99.02	Every institute settles the pension benefits on the day of retirement.	The problem is with the institutes that have to convert contributory provident funds to pension schemes.
7.2	Pay the accrued savings	95.02	Most of the institutes settle other savings accrued.	In the case of insurance schemes, they take more time to pay the contributions.
7.3	Reemployment of outstanding faculty for 3 years as the Ministry's Policy	26.72	Most of the leaders are not interested in reemploying the top 10 percent of the outstanding faculty members.	This scheme could be administered by the Ministry of Education.
7.4	Offering Emeritus Professor's post to the outstanding faculty	27.00	Almost all the administrators and leaders are not interested in implementing this scheme.	The Board of Governors can take up the issue.
7.5	Permitting the supervisors to continue to guide the research scholars after retirement as per the norms of UGC	44.28	Many leaders are not interested in this scheme even though there is no expenditure on the institute.	The beneficiaries are the research scholars. Many autonomous institutes don't have this provision.

4.3. Open Feedback

The 306 faculty members have expressed 50 significant feedback on various issues and they are presented in the annexure. Institutes can implement all these effective and efficient suggestions from the corpus funds saved from the project gains. In the long run, the growth of the institute and its outstanding contribution will enhance the development of human and knowledge capital.

4.4. Synthesis

The "RODEORR" model is based on learning organization theory. By getting feedback on all seven factors, the leaders can improve the policy on recruitment, orientation courses, faculty development programs, continuous evaluation of faculty's achievement, utilizing the many emerging opportunities, administering appropriate rewards based on the

outstanding performance of the faculty members, and treating the retired faculty with the due pension benefits.

4.5. Discussion

Most of the researchers have focused their research on one factor. It is essential to develop the faculty members from recruitment to retirement. Many of them will be contributing to the advancement of knowledge capital even after retirement. The Indian government has formulated a scheme to reemploy them for three years first and later for two years provided they possess good health.

The following are weak areas: Factor-1: Recruitment-based on excellence: a). Not providing a job description and job specification, b) Not stating retirement benefits.

Factor 2: Orientation: a) Not providing a faculty handbook that describes the rules and regulations

Factor 3: Faculty development. a) Sponsoring faculty to undergo internship, b) Not permitting the faculty members to undergo training programs offered in foreign countries.

Factor 4: Faculty evaluation. a). Not Mentoring faculty members to prepare 5 five-year self -development plan

Factor 5: Utilizing opportunities for faculty growth: a) Not nominating the outstanding faculty members for an internship at an international university, b) Not providing autonomy to develop new interdisciplinary postgraduate programs, c) Not permitting faculty members to develop diverse global faculty members, d) Not starting interdisciplinary doctoral programs, e) Not permitting to undertake complex consultancy projects under an international development agency, f) Not supporting outstanding faculty members to bid for faculty development project under an IDA, g) Not permitting to publish a set of instructional materials under a reputed publisher, h). Not approving to offer of webinars to a foreign university, i) Not sanctioning seed funds to organize an international conference, j) Not permitting a faculty to present innovations at an international conference.

Factor 6: Rewards and Recognitions: a) Not approving the faculty to bid for a project under an ordnance factory.

Factor 7: Retirement: a) Reemployment of the outstanding faculty members for three years as per the Education Ministry's guidelines and funding, b) Not offering emeritus professor post to the distinguished professor, c) Not permitting the outstanding professor to continue to guide the Ph.D. scholars after retirement based the UGC guidelines.

All the above factors center around outstanding faculty members which are to be decided by the Board of Governors and the Ministry of Education.

4.6. Validation

This model "RODEORR" has been validated through a committee of four principals of engineering colleges and they stated this model considers total planned development from recruitment and retirement. If the engineering institutes follow all the seven factors, they can ensure many outstanding faculty teams who can develop many industry-specific programs,

interdisciplinary postgraduate and doctoral programs, create a well-planned industrial linkage, offer many executive development programs, develop diverse global faculty development programs and offer consultancy programs to transnational companies and IDAs. After getting approval from the Board of Governors, they plan to implement stage by stage. They stated that the difficulties could be in training the senior faculty members, getting approval from the Board of Governors, selecting outstanding faculty members, and improving the goals, vision, and mission of the institutions. Since this model does not envisage more capital expenditure, they felt that they could convince their Board to pilot this model after presenting it in the faculty meeting.

5. Conclusion

This research work was based on the principles of learning organization. In this 21st Century, under the globalized economy, every developing country has to develop its higher education which has to effectively develop its faculty members. An empirical model termed “RODEORR” has been developed which considers a total development of the faculty members from recruitment of the outstanding faculty members, the orientation of the faculty towards the institutional goals, vision, mission, objectives, outcome-focused programs, interdisciplinary research, efficient service to the community, appreciative and 360-degree evaluation of the faculty’s contribution to the human and knowledge capital, capturing new opportunities in technology development and planning to continuously develop the institute, recognizing the faculty members for their outstanding contributions to knowledge and human capital, rewarding them effectively without any discrimination, and finally paying all the benefits of 30 to 40 years of dedicated service rendered by them. In-depth focus and honest feedback provided many drawbacks in every stage of implementing this “RODEORR” model by a large number of institutions in engineering. Appropriate suggestions and remedial measures have been indicated to correct the discriminating activities of leaders and administrators. They have to learn the harmful impacts on developing human and knowledge capital. Ultimately, they have to self-evaluate and focus on servant leadership and facilitate institutional development through the outstanding faculty teams. There is no shortcut.

5.1. Limitations in This Research Study

This study was conducted by taking sample participants from one state only. Every institute faces so many problems like limited funds, a few industries that employ engineering graduates, limited faculty members with extrinsic motivation, and limited job opportunities for the graduates. The results may be difficult to implement in all institutions.

5.2. Suggestions for Future Research

This study can be replicated in other states by including factors that are affecting the development of outstanding faculty teams, developing industry-specific engineering programs from diploma to Ph.D. programs, organizing diverse global engineering programs, undertaking consultancy projects under IDAs, patenting innovations, and generating revenues through efficient consultancy projects.

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Annexure-1

Questions are prepared based on the factors identified in the ‘RODEORR’ model and the participants are requested to indicate their response in the instrument which has been designed as the Kirickpatric four-point scale. These questions were administered in person while the faculty members underwent institutional development, preparing a detailed project proposal for capacity development, quality improvement, efficiency improvement, planning continuing education programs for the employees of various companies in the state, planning bid documents for undertaking projects under various international development agencies, establishing publication centers, and preparing instructional materials for the newly developed curricula.

Factor-1: Recruitment Based on Excellence

No.	Question	Always (4)	Sometimes (3)	A few times (2)	Almost Nil or Never (1)	Group Average Score out of 4
1.1	Whether job descriptions and job specifications are based on the assigned duties, tasks, program educational objectives, and specified outcomes?	9/306 2.94% Score 36	17/306 5.56% Score 51	54/306 17.65% Score 108	226/306 73.86% Score 228	1.38 Percent 1.38/4= 34.5%
1.2	Whether the prescribed qualifications are based on the AICTE guidelines	11/306 3.59% Score 44	21/306 6.86% Score 33	61/306 19.93% Score 122	213/306 69.61% Score 456	2.14 Percent 2.14/4= 53.51%
1.3	Whether the administrator awarded pay scale, allowances fixed by the Ministry of Education as advertised by All India Council for Technical Education (AICTE) or the University Grants Commission (UGC)?	209/306 68.30% Score 836	28/306 9.15% Score 84	34/306 11.11% Score 68	35/306 11.44% Score 35	3.34 Percent 3.34/4= 83.58%
1.4	Whether the administrator specify the retirement benefits in the advertisement?	3/306 0.98% Score 12	9/306 2.94% Score 27	13/306 4.25% Score 26	281/306 91.83% Score 281	1.13 Percent 1.13/4= 28.27%

Factor-2: Orientation based on the Goals, Vision, Mission, Faculty Handbook, well-designed cubicals, 24x7 Internet Connections, Noiseless Environment, Transport Facilities, Lighting, and Ventilation, Detailed Service and Recruitment Rules, and Medical facilities.

2.1	Whether the institute organized orientation courses on the goals, vision, and mission of the institute.	88/306 Score 352	124/306 Score 372	43/306 Score 86	43/306 Score 43	2.79 Percent 2.29/4= 69.69%

2.2	Whether the institute provided a handbook to the newly joined faculty members that provides needed information for all activities, rules, regulations, and the forthcoming institutional development processes?	12/306 Score 48	39/306 Score 78	51/306 Score 102	204/306 Score 204	1.41 Percent 1.41/4= 35.25%
2.3	Whether the institute provide well-designed cubicles to all newly recruited faculty members?	65/306 Score 260	76/306 Score 228	98/306 Score 196	67/306 Score 67	2.45 Percent 2.45/4= 61.25%
2.4	Is there a reliable internet facility, lighting, ventilation, lighting, and noise-free environment in the cubicles?	135/306 Score 540	59/306 Score 177	9/306 Score 18	103/306 Score 103	2.74 Percent 2.74/4= 68.46%
2.5	Whether the institute circulate letters received from the Ministry of Education to all faculty members?	141/306 Score 564	61/306 Score 183	79/306 Score 158	25/306 Score 25	3.04 Percent 3.04/4= 76%
2.6	Whether the institute approve a travel plan to attend seminars, conferences, and workshops as per the AICTE regulations?	193/306 Score 772	53/306 Score 159	22/306 Score 44	38/306 Score 38	3.31 Percent= 3.31/4= 82.77%
2.7	Whether the institute provide medical facilities for the faculty members as per the Ministry's guidelines?	121/306 Score 484	47/306 Score 141	65/306 Score 130	73/306 Score 73	2.58 Percent 2.58/4= 64.46%
2.8	Whether the institute offer transport facilities to the faculty members?	121/306 Score 484	58/306 Score 116	62/306 Score 124	65/306 Score 65	2.58 Percent= 2.58/4= 64.46%
						2.26

2.9	Whether the institute offer quarters with all amenities as per the rules?	53/306 Score 212	82/306 Score 243	66/306 Score 132	105/306 Score 105	Percent 2.26/4= 56.54%
2.10	Are there any indoor and outdoor sports facilities on the campus?	211/306 Score 844	76/306 Score 228	14/306 Score 28	5/306 Score 5	3.61 Percent 3.61/4= 90.28%

Factor-3: Development based on Equity, Programs at the state/national level, In-house Faculty Development Courses, MOOCs, Internships, and International Programs

3.1	Whether the institute offers in-house faculty development programs based on the needs of all faculty members to meet equity?	163/306 Score 652	56/306 Score 168	67/306 Score 134	20/306 Score 20	3.18 Percent 3.18/4= 79.58%
3.2	Whether the institute offer summer and winter faculty development programs?	79/306 Score 316	87/306 Score 261	97/306 Score 194	43/306 Score 43	2.66 Percent 2.66/4= 66.50%
3.3	Whether the institute permit the faculty members to undergo development programs organized under the AICTE directions?	211/306 Score 844	56/306 Score 168	32/306 Score 64	7/306 Score 7	3.54 Percent 3.54/4= 88.5%
3.4	Whether the institute sponsors the faculty members to undergo national training programs organized by the Indian Society for Technical Education.	168/306 Score 672	76/306 Score 228	66/306 Score 132	6/306 Score 6	3.39 Percent 3.39/4= 84.80%
3.5	Whether the institute recognizes the massive open online faculty development courses offered by various	71/306	54/306	87/306	94/306	2.33 Percent

3.5	international universities?	Score 284	Score 162	Score 174	Score 94	2.33/4= 58.33%
3.6	Whether the institute sponsor the faculty members to undergo internships organized by international universities?	9/306 Score 54	24/306 Score 72	43/306 Score 86	230/306 Score 230	1.45 Percent 1.45/4= 36.19%
3.7	Whether the institute permit the faculty members to apply for development programs offered by foreign countries under the bilateral agreements?	4/306 Score 16	11/306 Score 33	23/306 Score 46	268/306 Score 268	1.19 Percent 1.19/4= 29.66%
3.8	Whether the institute sponsors faculty members to contest for national fellowships of various professional associations.	9/306 Score 36	32/306 Score 96	45/306 Score 90	220/306 Score 230	1.48 Percent 1.48/4= 36.93%

Factor-4: Evaluation, Unbiased, 360 Degree Oriented Evaluation, Appreciative Inquiry, Proactive Assessment

4.1	Whether the institute evaluate the achievement, services offered, and consultancy projects completed every year?	34/306 Score 136	67/306 Score 201	76/306 Score 152	129/306 Score 129	2.02 Percent 1.79/4= 50.49%
4.2	Whether the institute evaluates the teaching performances of the faculty members through the students?	67/306 Score 268	98/306 Score 294	78/306 Score 156	63/306 Score 63	2.55 Percent 2.55/4= 63.81%
4.3	Whether the institute suggest that faculty members prepare three or five-year development programs against fast-growing technologies in their branches?	23/306 Score 92	43/306 Score 129	74/306 Score 148	166/306 Score 166	1.75 Percent 1.75/4= 43.71%
4.4	Whether the institute send letters of appreciation for excellent performances like publication, consultancy programs completed, and the highest employment of the students?	56/306 Score 224	67/306 Score 201	59/306 Score 118	124/306 Score 124	2.18 Percent 2.14/4= 54.49%
4.5	Do they provide opportunities to present the faculty member's achievements to the Board of Governors?	78/306 312	98/306 294	76/306 152	54/306 54	2.65 Percent 2.65/4= 66.34%
4.6	Does the institute nominate outstanding faculty members to get national recognition?	67/306 268	87/306 529	93/306 186	59/306 59	3.41 Percent 3.41/4= 85.13%

Factor-5: Opportunities, Proactive Nomination, Academic Autonomy, Delegation of Needed Autonomy for offering Innovative Courses, Diverse Global Faculty Development Programs, Interdisciplinary Postgraduate and Doctoral Programs, Undertaking Complex Projects under various International Development Agencies (IDAs), Bidding for Interdisciplinary Consultancy Programs, Publication of Research Articles, Textbooks, Manuals, Monographs, Educational

Video Programs, Podcasts, Webinars, Developing Multi-Media Learning Packages (MMLPs), Planning for National and International Conferences, and Workshops.

5.1	Whether the administrator nominate any outstanding faculty member to an international university as an intern based on their selection?	7/306 Score 28	9/306 Score 27	12/306 Score 24	278/306 Score 278	1.17 Percent 1.17/4= 29.17%
5.2	Whether the administrator provide academic autonomy to develop new interdisciplinary postgraduate programs based on industrial demand?	11/306 Score 44	14/306 Score 42	21/306 Score 42	260/306 Score 260	1.27 Percent 1.27/4= 31.70%
5.3	Whether the administrator provides support to develop a diverse faculty development program?	13/306 52	17/306 51	23/306 46	253/306 253	1.31 Percent 1.31/4= 32.84%
5.4	Whether the administrator accord permission to start an interdisciplinary doctoral program?	9/306 Score 36	21/306 Score 63	25/306 Score 50	251/306 Score 251	1.33 Percent 1.33/4= 33.25%
5.5	Whether the administrator approves the outstanding faculty teams to undertake a complex consultancy project under an International Development Agency?	12/306 Score 48	14/306 Score 42	22/306 Score 44	258/306 Score 258	1.28 Percent 1.28/4= 32.03%
5.6	Whether the administrator supports a well-accomplished faculty team to bid for a faculty development project under an international development agency?	16/306 Score 64	31/306 Score 93	42/306 Score 84	217/306 Score 217	1.50 Percent 1.50/4= 37.42%
5.7	Whether the administrator approve of publishing a series of outstanding research articles at an international conference?	79/306 Score 316	101/306 Score 303	107/306 Score 214	19/306 Score 19	2.27 Percent 2.27/4=

		316	303	214	19	56.70%
5.8	Whether the administrator permitted to publish a set of textbooks, laboratory manuals, and training manuals through a reputed publisher?	116/306 Score 464	130/306 Score 390	56/306 Score 112	4/306 Score 4	1.27 Percent 1.27/4= 31.86%
5.9	Whether the administrator accord permission to develop a series of appropriate educational video programs in cooperation with a company?	171/306 Score 684	76/306 Score 228	43/306 Score 86	16/306 Score 16	3.31 Percent 3.31/4= 82.84%
5.10	Whether the administrator permitted to present a webinar to a foreign university course through videoconference?	12/306 Score 48	32/306 Score 96	47/306 Score 94	215/306 Score 215	1.01 Percent 1.01/4= 25.24%
5.11	Whether the administrator approve the development of a multimedia learning package for an executive development program?	45/306 Score 180	65/306 Score 195	78/306 Score 156	118/306 Score 118	2.15 Percent 2.15/4= 53.75%
5.12	Whether the administrator approves the planning and conducting of a national conference?	78/306 Score 312	98/306 Score 294	57/306 Score 114	73/306 Score 73	2.59 Percent 2.59/4 64.79%
5.13	Whether the administrator sanction need funds to organize an international conference at the institute?	8/306 Score 16	9/306 Score 27	11/306 Score 22	288/306 Score 288	1.15 Percent 1.15/4 28.84%
5.14	Whether the administrator approves the planning of a summer school for Non-Resident Indian Graduates based on the letter of invitation from the Ministry of External Affairs?	5/306 Score 20	32/306 Score 96	51/306 Score 102	218/306 Score 218	1.42 Percent 1.42/4 35.62%

5.15	Whether the administrator grant permission to participate in a peripatetic seminar organized by UNESCO?	3/306 Score 12	7/306 Score 21	11/306 Score 22	285/306 Score 285	1.11 Percent 27.78%

Factor-6: Rewards and Recognitions based on Outstanding Accomplishments, and Facilitation for Further Development

6.1	Whether the administrator reward the faculty teams based on their outstanding accomplishments?	42/306 Score 168	67/306 Score 201	95/305 Score 190	102/306 Score 102	2.16 Percent 2.16/4= 54.00%
6.2	Whether administrators facilitate well-performing teams for further development?	67/306 Score 268	85/306 Score 249	89/306 Score 178	65/306 Score 65	2.48 Percent 62.09
6.3	Whether the administrator recognizes the outstanding performance of a faculty team in coaching, and mentoring a team of postgraduate students in a national quiz program conducted by the Confederation of Industries?	88/306 Score 352	78/306 Score 234	16/306 Score 32	124/306 Score 124	2.42 Percent 2.42/4= 60.62%
6.4	Whether the administrator sanction travel funds for conducting technical working meetings convened by UNESCO in Asia which will be reimbursed by a foreign government?	98/306 Score 392	69/306 Score 207	54/306 Score 108	85/306 Score 85	2.59 Percent 2.59/4= 64.71%
6.5	Whether the administrator approve a technical and financial proposal for bidding on a quality assessment program under the Ministry of Defence?	6/306 Score 24	11/306 Score 33	32/306 Score 64	257/306 Score 257	1.24 Percent 1.24/4= 31.00%

Factor-7: Retirement, Pension, Payment of Accrued Savings

7.1	Whether the administrator settles the pension papers on the day of retirement?	299/306 Score 1196	3/306 Score 9	2/306 Score 4	2/306 Score 2	3.96 Percent 3.96/4 99.02%
7.2	Whether the administrator pay other accrued savings like medical insurance amount paid within one month of retirement?	278/306 Score 1112	12/306 Score 36	7/306 Score 14	9/306 Score 9	3.83 Percent 3.83/4 95.67%
7.3	Whether the administrator re-employ the top 10% of the retired faculty members for another three years based on the Ministry of Education Guidelines?	2/306 Score 8	4/306 Score 12	9/306 Score 18	289/306 Score 289	1.07 Percent 1.07/4 26.72%
7.4	Whether the administrator offer an emeritus post to the best-accomplished faculty member upon his/her retirement?	3/306 Score 12	5/306 Score 15	7/306 Score 14	291/306 Score 291	1.08 Percent 27.00%
7.5	Whether the administrator approve guiding the doctoral candidates after retirement based on the University Grant Council's Norms?	32/306 Score 128	43/306 Score 129	54/306 Score 108	177/306 Score 177	1.77 Percent 44.28%

8. Open Question

Kindly indicate any activity that you feel is essential to create happiness in the institute which will improve the academic environment so that the faculty members can contribute to the growth of knowledge and human capital, develop engineering without boundaries, eradicate poverty, and assist the GDP.

The most significant statements received are:

1. No discrimination based on discretion
2. Transparent administration
3. Equity is all assignments
4. Ethics in all decision-making
5. Integrity in all actions

6. Implementation of all AICTE guidelines from recruitment to retirement
7. Strategic planning in all development tasks
8. Servant leadership
9. Timely rewards for outstanding performance
10. Faculty development programs to achieve excellence in inducting attributes
11. The ergonomic design of labs, workshops, classrooms, cubicles
12. Excellent scaffolding of the faculty members
13. Sabbatical leave to undergo global training
14. In-house faculty development programs
15. Establishment of a video production center
16. Evaluation of curriculum against the fast changes in industrial production
17. Reimbursement of travel expenditure for attending one international conference
18. Sponsoring faculty members to Ph.D. programs in the AICTE approved institutions
19. Establishment of a consultancy center
20. Continuing education programs for the employees of local companies
21. Organizing part-time undergraduate and postgraduate programs in emerging technologies
22. Planning national seminars every year
23. Planning international conferences once in five years
24. Planned Industrial Exposure
25. Organizing Interdisciplinary Research Programs
26. A shopping center on the campus
27. A medical center
28. A good canteen
29. An Indore game center
30. An auditorium for conducting conferences
31. Conduct of Mini-seminars of the Advancement of Technology
32. Upgrading needed software periodically
33. An annual retreat to a historical place
34. A coffee club to meet colleagues once a month to discuss the advancements in engineering education
35. Annual dinner for all faculty members and staff on Teachers Day (5th September)
36. A newsletter to share the achievements of the faculty members
37. A display of the books published by the faculty members in the library
38. Annual Report on the research papers published by the faculty member
39. In-house seminars of the lessons to be shared from the foreign visits of the faculty members
40. Alumni meeting once a year
41. In-house Faculty Development Courses at the beginning of each semester
42. Visits to Industrial Products Display

43. Invited talk of leading design engineers once a year
44. Invited talk of leading researchers once a year
45. Invited talk of leading textbook publishers once a year
46. Invited talk of Chairpersons of Industrial Associations alternate years
47. Formation of Quality Circle meeting once a semester
48. Invited talk of leading global researchers once in five years through video conference
49. Invited talk of leading researchers from the national laboratories
50. A workshop on institutional development once a year

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