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A comparative study on attitude analysis of faculty on quality management practices in select engineering institutions

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Abstract
The purpose of the paper is to analyse the Faculty perceptions on quality management practices in engineering educational institutions. It is imperative that there is a need to develop quality institutions to sustain in competitive environment. Today huge engineering educational institutions are in existence, but many of these institutions are ignoring the beneficiary satisfaction in pursuit of their economic goal. One can adjudge the quality of an institution based on the beneficiary satisfaction. In this regard, for adjudging the quality, researchers tried to measure the opinions with the help of ten dimensions. Likert five point rating scale is used to assess the degree of satisfaction. This questionnaire was administered with engineering graduates of seven engineering colleges in GUNTUR District. Means, Standard Deviations, t-test, one way ANOVA are calculated by using IBM SPSS Statistics 20 to test the difference in the Faculty perceptions of various engineering Institutions.

Keywords: academic leadership, quality institutions, quality education, learning out come

Introduction
Higher technical education, which includes technical education, has been recognized as the driving force for economic and social progress of humanity in general and of a country in particular. Higher technical education produces skilled workforce and leaders who build the machinery that meets the needs of the society and produces wealth. Having this in mind, the policy makers started encouraged starting Engineering colleges across the country. As a result, the engineering education has vastly expanded in the country in last couple of decades. The state of Andhra Pradesh tops the list of states with 717 Engineering colleges with 3, 42,376 students in take. Lakhs of Engineering graduates are coming out of the thousands of institutions in the country wide each year. Interestingly, the requirement of the industry, especially the software industry, is also in lakhs. The irony, however, is the industry says that only less than 10% of our Engineering graduates are employable. This is a paradoxical situation. The quality of education and training being imparted in the Engineering Education institutions in India varies from very good to poor. While a few institutions can distantly be compared with the best in the world, the others suffer from different degrees of handicaps. There is huge gap between educational standards of such elite institutions and a large number of other engineering colleges. As mentioned above, the traditional and rigid Engineering Educational Institutions failed to respond effectively the problems of developing needs of the society. It is therefore, became imperative to have quality management orientation in every engineering college. By realizing this, the authors have made an attempt to study faculty opinions on quality management practices in select engineering institutions.

Objectives of the study
The study has been conducted with the following specific objectives:
- To extract the perceptions of Faculty in the select engineering institutions on quality management practices.
- To suggest measures for effective implementation of quality management practices effectively in selected engineering institutions particular and in all engineering institutions in general.

Hypotheses set for the study
- The perceptions of the Faculty in three categories of colleges are indistinguishable with respect to Quality Management Practices.
- The perceptions of Faculty in the pairs of three categories of colleges are identical in each other with respect to Quality Management Practices.

Methodology
In the past three decades, there has been rapid expansion in engineering education. India is having over 1500 engineering institutions with over 5 lakh students intake. Andhra Pradesh is located in the coastal south India extending on to Deccan Plateau, is the fifth largest in India with a population of more than seven crores with an area of 2.75 lakh sq.km. In the state of united Andhra Pradesh itself, there are 717 Engineering colleges with the student intake of over 3.4 lakhs. The present study concentrates on the Guntur Dist. It has 46 colleges with 22,080 students intake. Present study mainly focuses on Guntur dist.,.of A.P.as Guntur district is considered as educational hub of Andhra Pradesh. The age of the institutions are taken as basis for sample selection. Further student preference in

selecting the institutions (based on EAMCET ranking) is considered. The study is mostly exploratory in nature

The researcher has selected seven engineering colleges out of 46 available in Guntur District which have more than 10 years of age after its inception. Researcher strongly believes that for quantification of qualitative issues such as teaching learning procedures, placements and Research & Development etc., is possible only after 10 years of its existence. Seven educational institutions were in existence with 10 years of history. In the seven sample engineering institutions, the opinions are collected from the Faculty. After having selected the institutions with above 10 years of age, further an attempt has been made to segregate them into three categories based on the students preference for selecting the institution (based on EAMCET ranking) for admission purpose. Based on priority, the institutions are divided into 3 levels. While taking student preference, researcher has taken Electronics & Communication Engineering (ECE) branch as this is the most preferential one in last decade. Five years data is collected and average rank is taken while finalizing the levels. Data is collected from APCHE website.

Collection of Data

Data elicited from related people through observation, personal interview and questionnaires. Part one of the questionnaire consists of personal information of the respondent and Part two of the questionnaire is distributed to the faculty members of the engineering institutions contain the data regarding working and performance of office, perceptions of the staff with respect to principal as a leader, qualities of a teacher and linkage with society, students performance, conduct of co-curricular activities, teaching-learning process, examination system that is being followed and staff satisfaction towards their job. The aim of this paper is to explore the role of faculty in engineering education along with the results of opinions elicited from faculty of selected engineering institutions through the various Quality Management dimensions.

The following table representing Mean and standard Deviation values of the perceptions of faculty on different aspects of Quality Management in sample colleges.

Table 1: Mean and S.D. values of perceptions of Faculty on various aspects of Quality

Statement	Name of the College													
	RVR		BEC		NEC		NIIT		LITHM		CREC		NEWTON	
	Mean	S. D	Mean	S. D	Mean	S. D	Mean	S. D	Mean	S. D	Mean	S. D	Mean	S. D
Perceptions of Faculty about Leadership Qualities of Principal														
Principal is initiator.	3.65	1.35	3.52	1.35	3.45	1.36	3.00	1.38	3.07	1.32	3.07	1.32	2.97	1.34
Principal is dynamic	3.37	1.26	3.25	1.30	3.17	1.26	2.92	1.39	3.07	1.47	3.12	1.48	2.80	1.36
Principal enjoys the confidence.	3.33	1.42	3.27	1.23	3.27	1.31	3.08	1.28	2.89	1.38	2.96	1.37	2.87	1.34
Principal shows concern	3.39	1.37	3.19	1.37	3.25	1.28	2.71	1.18	3.04	1.28	3.01	1.35	2.68	1.46
Principal takes interest in staff	3.21	1.44	3.33	1.23	3.15	1.25	3.12	1.27	2.60	1.34	2.80	1.24	2.73	1.26
Principal takes important decisions	3.49	1.30	3.21	1.34	3.25	1.42	2.77	1.40	2.88	1.39	2.81	1.41	2.67	1.37
Principal enjoys working in this institution	3.39	1.45	3.33	1.30	3.24	1.25	2.28	1.35	2.64	1.47	2.96	1.37	2.87	1.34
Perceptions of Faculty about Quality of peer group														
Teachers prepare before they teach	3.56	1.33	3.35	1.35	3.31	1.29	3.15	1.40	3.01	1.30	2.97	1.38	2.80	1.36
Teachers command on subject	3.23	1.33	3.21	1.33	2.97	1.44	2.96	1.41	2.95	1.38	2.91	1.43	2.88	1.40
Teachers enjoy teaching	3.55	1.33	3.39	1.39	3.36	1.36	3.24	1.38	3.15	1.34	2.95	1.44	2.80	1.36
Teachers are trained	3.16	1.42	3.40	1.29	3.27	1.34	2.99	1.35	2.73	1.38	2.80	1.24	2.97	1.29
Teachers are willing to take responsibilities.	3.21	1.43	3.27	1.32	3.32	1.37	3.05	1.33	2.79	1.40	3.09	1.39	3.03	1.34
teachers like to undergo training	2.44	1.33	2.65	1.35	2.69	1.29	2.85	1.40	2.99	1.30	3.03	1.38	3.20	1.36
Perceptions of Faculty about Linkage with external bodies														
experts visit this Institution	3.09	1.41	3.16	1.35	3.07	1.21	2.64	1.23	2.83	1.40	3.00	1.41	2.99	1.36
Former students visit	3.25	1.45	3.20	1.39	3.05	1.28	2.85	1.40	2.72	1.42	2.97	1.38	2.67	1.37
Parents visit and discuss	3.33	1.33	3.07	1.42	2.84	1.36	2.83	1.32	2.89	1.36	2.87	1.43	2.88	1.40
It is not isolated institution	3.39	1.37	3.25	1.30	3.12	1.33	2.96	1.36	2.50	1.33	2.89	1.43	2.89	1.32
Institution interacts with outside agencies	3.29	1.36	3.16	1.29	3.07	1.21	2.64	1.23	2.83	1.40	3.01	1.43	3.00	1.38
Most teachers are the members of local clubs	3.32	1.35	3.20	1.34	3.04	1.35	2.91	1.39	2.92	1.39	2.83	1.41	2.81	1.41
Perceptions of Faculty about Students														
Students organize various student activities skillfully	3.21	1.40	3.23	1.31	3.09	1.37	2.99	1.35	2.91	1.40	2.96	1.35	3.20	1.36
Students are usually very good	3.33	1.35	3.16	1.38	3.12	1.38	3.24	1.34	3.07	1.40	2.96	1.37	2.95	1.31
Many students stay focused	3.20	1.36	2.99	1.37	3.13	1.34	2.96	1.38	2.45	1.37	2.95	1.44	2.80	1.36
Students are strong in expression	3.23	1.37	3.15	1.36	3.19	1.29	2.91	1.29	2.96	1.32	2.79	1.33	2.96	1.37
Students show much interest in studies	3.09	1.40	3.16	1.34	3.15	1.27	2.75	1.33	2.83	1.40	3.00	1.41	2.84	1.37
Students take studies seriously	3.19	1.35	3.29	1.31	3.13	1.37	3.05	1.33	2.79	1.40	3.03	1.33	2.88	1.36
Perceptions of Faculty about Co-curricular activities														
Co-curricular activities are necessary	3.23	1.38	3.08	1.33	3.16	1.28	2.89	1.36	2.80	1.39	2.87	1.36	2.83	1.38
Teachers involve in Co-curricular activities	3.27	1.40	3.19	1.40	3.21	1.27	2.84	1.35	2.72	1.37	2.87	1.36	2.83	1.38
Co-curricular activities are organized	2.56	1.33	2.65	1.35	2.69	1.29	2.80	1.39	2.69	1.41	2.81	1.37	2.63	1.30
Students actively take part in co-curricular activities	3.33	1.40	3.21	1.39	3.27	1.34	2.99	1.35	3.00	1.40	2.89	1.28	2.97	1.29
Cultural activities are organized.	3.23	1.35	3.12	1.25	3.17	1.20	2.95	1.22	2.83	1.27	2.87	1.31	2.84	1.40
Perceptions of Faculty about Teaching – Learning Process														
Teachers review teaching from time to time	3.32	1.34	3.12	1.30	3.11	1.31	3.03	1.34	2.83	1.37	2.96	1.41	2.84	1.35
teachers manage their classes well	3.23	1.43	3.28	1.25	3.24	1.33	2.81	1.28	3.27	1.35	2.96	1.35	2.99	1.33

Teachers really care	3.24	1.40	3.27	1.42	3.21	1.27	2.96	1.37	3.05	1.37	3.01	1.37	3.09	1.37
Teaching is mostly reading from texts	3.33	1.38	3.23	1.38	3.15	1.27	2.85	1.40	2.73	1.37	2.97	1.38	2.67	1.37
Students are properly assessed	3.32	1.35	3.17	1.38	3.12	1.38	3.24	1.34	3.11	1.38	2.96	1.37	2.79	1.35
Curriculum is completed in time	3.37	1.39	3.27	1.35	3.17	1.36	3.13	1.36	3.03	1.38	2.96	1.37	2.95	1.31
Perceptions of Faculty about Office Management														
No underhand dealings	3.44	1.29	3.27	1.34	3.13	1.32	3.28	1.29	3.16	1.33	2.87	1.36	2.83	1.38
Office is very helpful	3.31	1.32	3.21	1.33	3.13	1.36	3.13	1.40	2.95	1.38	2.96	1.37	2.88	1.40
Office manages systematically	3.36	1.35	3.23	1.35	3.23	1.42	3.07	1.35	2.95	1.38	2.91	1.43	2.88	1.40
Office is satisfactory	3.28	1.32	3.20	1.31	3.23	1.42	2.95	1.29	2.92	1.38	2.91	1.40	2.91	1.42
Office takes no time to respond	3.33	1.37	3.20	1.35	3.05	1.28	2.85	1.40	2.72	1.42	3.08	1.31	2.89	1.39
common procedure	3.32	1.41	3.28	1.38	3.23	1.40	3.28	1.35	3.23	1.37	3.29	1.36	3.21	1.42
Perceptions of Faculty about Team work														
relationship between principal and staff	3.09	1.33	2.96	1.32	3.04	1.37	3.04	1.42	2.75	1.38	3.03	1.31	3.17	1.41
friendship within the faculty	3.31	1.35	3.25	1.29	3.27	1.31	2.91	1.34	3.00	1.39	3.01	1.37	2.97	1.29
Teachers work as teams	3.25	1.39	3.13	1.36	3.21	1.30	2.96	1.35	2.96	1.30	2.99	1.35	2.83	1.35
Teachers are not divided into warring groups	3.11	1.35	2.95	1.35	2.96	1.37	2.93	1.35	3.16	1.28	3.03	1.35	2.95	1.33
There are no warring cliques in the faculty	3.20	1.38	3.11	1.35	3.09	1.30	2.96	1.38	2.93	1.39	3.05	1.35	2.95	1.35
Perceptions of Faculty about Examination System														
Examinations use various test items which help students	3.33	1.32	3.17	1.39	3.09	1.35	3.16	1.29	3.04	1.37	3.04	1.35	2.88	1.40
Students get opportunities to discuss	3.23	1.37	3.27	1.27	3.11	1.29	2.97	1.34	2.80	1.39	2.87	1.36	2.83	1.38
There are no partialities	3.20	1.30	3.09	1.30	3.12	1.42	3.09	1.32	2.93	1.34	2.97	1.38	3.04	1.34
Exams improve the students EQ and IQ	3.19	1.34	3.19	1.28	3.11	1.35	3.15	1.29	2.95	1.41	2.93	1.40	2.80	1.36
Well-developed assessment scheme.	3.19	1.38	3.00	1.35	2.88	1.40	3.15	1.40	3.01	1.30	2.97	1.38	2.80	1.36
Perceptions of Faculty about Satisfaction about the job														
teachers enjoy jobs	3.21	1.36	3.21	1.34	3.08	1.29	2.95	1.35	2.84	1.39	2.99	1.35	2.83	1.38
Teachers are happy	3.23	1.37	3.23	1.39	3.17	1.28	2.84	1.35	2.72	1.37	2.87	1.36	2.83	1.38
Principal enjoys working	3.44	1.30	3.27	1.35	3.13	1.32	3.28	1.29	3.16	1.33	2.87	1.36	2.83	1.38
teachers enjoy working	3.37	1.36	3.21	1.34	3.11	1.31	3.03	1.34	2.83	1.37	2.95	1.36	2.84	1.35
Staff enjoys company	3.24	1.35	3.16	1.38	3.12	1.35	3.01	1.33	2.93	1.32	2.84	1.31	3.08	1.38
Teachers do not like to leave the institution.	3.36	1.33	3.23	1.37	2.84	1.44	2.76	1.38	2.68	1.38	2.80	1.43	2.69	1.38

From the above table it can be observed that in first level institutions the majority of the respondents are opined on the Quality Management dimension of leadership qualities of principal shows that, the principal shows a lot of initiative, he enjoys the faculty confidence and takes important decisions. The majority of the respondents are opined on the dimension of students participation in co-curricular activities shows that, the co-curricular activities are considered necessary and students actively take part in co-curricular activities when compared to other two level colleges. On the dimension of satisfaction about the job it was observed that in first level colleges Principal enjoys working in this institution and also most teachers enjoy working in this institution. Respondents in second level institutions are opined on the Quality Management dimension of leadership qualities of principal shows that, the principal is very dynamic and he shows much concern for staff. On the dimension of quality of peer group it was observed that, the teachers are adequately trained and sometimes even if provisions were made, most teachers would not like to undergo training. Respondents are opined on the dimension of linkage with external bodies represents that, in second level colleges former students often visit the institution and parents frequently visit the institution and they discuss their ward's performance with the teachers. On the dimension of students it was observed that, the students are usually very good and students take studies seriously. The majority of the respondents are opined on the dimension of students' participation in co-curricular activities shows that, the teachers are involved in co-curricular activities. In third level institutions the majority of the respondents are opined on the Quality Management dimension of leadership qualities of principal shows that, the principal takes interest in solving the problems of the staff and he enjoys working in the institution when compared to other two level colleges.

The following table representing Mean and standard Deviation values of the perceptions of faculty on examination system in sample colleges.

Table 2: Perceptions of faculty on various Quality Management Dimensions in engineering education in first, second and third level institutions

First Level Institutions					
Quality Dimensions	**RVR**		**BEC**		**2 tailed t-test**
	Mean	**S.D**	**Mean**	**S.D**	
Leadership qualities of Principal	3.40	0.13	3.30	0.11	2.191
Quality of peer group	3.19	0.40	3.21	0.28	-0.263
Linkage with external bodies	3.27	0.10	3.17	0.06	2.353
Opinion about Students	3.20	0.07	3.16	0.10	0.858
students participation in Co-curricular Activities	3.12	0.31	3.05	0.22	1.741
Teaching-Learning process	3.30	0.05	3.22	0.06	1.937
Office Management	3.34	0.05	3.23	0.03	5.851
team work	3.19	0.09	3.08	0.12	6.532

Examination system	3.22	0.06	3.14	0.10	1.875	
Satisfaction about the job	3.30	0.09	3.21	0.03	2.885	
Second Level Institutions						
Leadership qualities of Principal	3.25	0.09	2.84	0.29	3.640	
Quality of peer group	3.15	0.27	3.04	0.14	1.659	
Linkage with external bodies	3.03	0.09	2.85	0.15	3.270	
Opinion about Students	3.14	0.03	2.98	0.17	2.076	
students participation in Co-curricular Activities	3.10	0.23	2.89	0.08	2.493	
Teaching-Learning process	3.17	0.05	3.01	1.66	2.002	
Office Management	3.17	0.07	3.09	0.19	1.086	
team work	3.11	0.12	2.96	0.05	2.279	
Examination system	3.06	0.10	3.14	0.08	-0.622	
Satisfaction about the job	3.08	0.12	2.98	0.18	1.547	
Third Level Institutions						
Leadership qualities of Principal	2.88	0.19	2.96	0.12	2.79	0.17	2.107
Quality of peer group	2.96	0.15	2.95	0.18	2.96	0.15	0.037
Linkage with external bodies	2.79	0.15	2.92	0.09	2.87	0.17	2.225
Opinion about Students	2.85	0.21	2.94	0.08	2.98	0.14	0.977
students participation in Co-curricular Activities	2.88	0.12	2.86	0.03	2.82	0.16	0.396
Teaching-Learning process	3.33	0.19	2.97	0.02	2.88	0.15	1.028
Office Management	2.99	0.18	3.33	0.18	2.93	0.18	0.315
team work	2.96	0.17	3.22	0.08	2.97	0.18	0.426
Examination system	2.96	0.09	2.96	0.06	2.87	0.19	1.467
Satisfaction about the job	2.86	0.17	2.89	0.07	2.85	0.16	0.128

Perceptions of faculty on various Quality Management Dimensions in engineering education in first level institutions shows that the calculated values of the test statistic t of two tailed test 2.191, $|-0.263|$, 2.353, 0.858, 1.741, 1.937 and 1.875 are less than the critical values 2.447, 2.571, 2.571, 2.571, 2.776, 2.571 and 2.776 for 5% level of significance for the dimensions leadership qualities of principal, quality of peer group, linkage with external bodies, students, students participation in co-curricular activities, teaching-learning process and examination system in first level institutions. The calculated values of the test statistic t of two tailed test 5.851, 6.532 and 2.885 are greater than the critical values 2.571, 2.776 and 2.571 for 5% level of significance. The two-tailed t-test revealed that there is no difference in the perceptions of faculty for the dimensions leadership qualities of principal, quality of peer group, linkage with external bodies, students, students participation in co-curricular activities, teaching-learning process and examination system and there is difference for the dimensions office management, team work and satisfaction about the job of first level engineering institutions. Perceptions of faculty on various Quality Management Dimensions in engineering education in second level institutions shows that the calculated values of the test statistic t of two tailed test 1.659, 2.076, 2.493, 2.002, 1.086, 2.279, $|-0.622|$ and 1.547 are less than the critical values 2.571, 2.571, 2.776, 2.571, 2.571, 2.776, 2.776 and 2.571 for 5% level of significance in second level institutions. The calculated values of the test statistic t of two tailed test 3.640 and 3.270 are greater than the critical values 2.447 and 2.571 for 5% level of significance. The two-tailed t-test revealed that there is no difference in the perceptions of faculty for the dimensions second level engineering institutions. Perceptions of faculty on various Quality Management Dimensions in engineering education in third level institutions shows that the calculated values of the test statistic F 2.107, 0.037, 2.225, 0.977, 0.396, 1.028, 0.315, 0.426, 1.467 and 0.128 are less than the critical values 3.555, 3.682, 3.682, 3.682, 3.885, 3.682, 3.682, 3.885, 3.885 and 3.682 for 5% level of significance. This gives inference that there is no difference in the perceptions of faculty of the third level engineering institutions.

Table 3: ANOVA of Faculty Perceptions about various aspects of Quality Management Dimensions in Engineering Education

S. No.	Dimensions	Details	Sum of Squares	d.f	Mean Square	F
1	Leadership qualities of Principal	Between Groups	1.866	2	0.933	22.891
		Within Groups	1.875	46	0.041	
		Total	3.741	48		
2.	Quality of peer group	Between Groups	0.486	2	0.243	4.688
		Within Groups	2.020	39	0.052	
		Total	2.505	41		
3.	Linkage with external bodies	Between Groups	0.868	2	0.434	20.069
		Within Groups	0.844	39	0.022	
		Total	1.712	41		
4	Opinion about Students	Between Groups	0.573	2	0.286	15.921
		Within Groups	0.702	39	0.018	
		Total	1.275	41		
5.	students participation in Co-curricular Activities	Between Groups	0.426	2	0.213	6.154
		Within Groups	1.107	32	0.035	
		Total	1.533	34		

6.	Teaching-Learning process	Between Groups	0.686	2	0.343	21.182
		Within Groups	0.632	39	0.016	
		Total	1.318	41		
7.	Office Management	Between Groups	0.704	2	0.352	20.888
		Within Groups	0.657	39	0.017	
		Total	1.361	41		
8.	team work	Between Groups	0.137	2	0.068	5.191
		Within Groups	0.421	32	0.013	
		Total	0.558	34		
9.	Examination system	Between Groups	0.433	2	0.216	26.801
		Within Groups	0.258	32	0.008	
		Total	0.691	34		
10.	Satisfaction about the job	Between Groups	1.139	2	0.570	37.452
		Within Groups	.593	39	0.015	
		Total	1.732	41		

ANOVA of Faculty Perceptions about various aspects of Quality Management Dimensions in Engineering Education shows that the calculated values of the test statistic F 22.891, 4.688, 20.069, 15.921, 6.154, 21.182, 20.888, 5.191, 26.801, 37.452 are greater than the critical values 3.200, 3.238, 3.238, 3.238, 3.295, 3.238, 3.238, 3.295, 3.295, 3.238 for 5% level of significance. Hence, the null hypotheses are rejected. This gives us inference that there exists difference in the perceptions of faculty of the third level engineering institutions. The study reveals that there is difference in the category of faculty satisfaction of the selected third level engineering colleges.

Suggestions for Quality Management Practices in Engineering Education

The following are some of the suggestions made to the administrative people, faculty and students of engineering colleges.

- **Cluster Colleges:** Engineering colleges located nearer to each other can form into a cluster for sharing of recourses, faculty, specializations etc., for common benefit. Such a clustering reduces the costs significantly. Affiliating universities can take initiatives in this regard.
- **Faculty Development:** An engineering college with a minimum core of 25% of faculty with postgraduate qualifications, covering all the branches, shall only be permitted to start. At least three faculty members with Ph.D., degree shall be appointed in each department. Colleges shall depute their faculty to industry for training at least for one month in each year. 21st century skills are need of the hour and outcomes will be judged by learning outcomes of student. Under-qualified, inexperienced and novice faculty are to be trained by giving suitable incentives (e.g. acquiring higher degrees, getting better emoluments and working in an environment that recognizes and rewards merit). This scheme will also be used by faculty to improve their qualifications through suitably built procedures.
- **Outcome Based Curricula :** The curricula shall be outcome based spelling out what the student would learn at the end of the course and what is acquired of him / her to achieve this. This shall be framed by the affiliating university. Each college can make further value additions in terms of additional inputs, industrial experience, real-time project works, certificate courses etc.,
- **Ensuring Skill Development:** One of the primary objectives of engineering education is acquiring skills. The institutions shall ensure the acquiring of core, professional and soft skills that are required for employment and nation building.
- **Reforms to Evaluation:** This has been advocated for decades but very little has been done in this area. Universities shall design and implement education methods that primarily assess the learning outcomes.
- **Home Examinations:** In-house evaluation shall be strengthened by continuously assessing the outcomes (knowledge, skills, problem solving, creativity, imagination and values) by diversifying the evaluation methods. The methods and the concepts behind shall be displayed on the college website.
- **Meaningful Project Work:** The project work undertaken by the students in the final semester must be based on a real time work. The college shall ensure the truthfulness and validity of the project work. Community related actual problems shall be identified by the college and assign them as project work.

Conclusion

The paper is all about measuring the perceptions of the faculty on quality management practices in select engineering institutions. The quality of education is becoming important, particularly so in higher technical education, where the products/output of the system, can have a direct impact on the quality of their employer organizations. According to the results, the engineering institutions have to adapt proactive approach to continually improve the efficiency of quality management system through the use of quality policy, quality objectives, audit results, analysis of data, corrective actions and preventive actions and management review. No doubt, the implementation of Quality Management practices challenges the traditional teaching practices. But the changes are inevitable to uplift the working of present system. It involves not only changes in teaching methodology but also change in the outlook administrators of the institutions.

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