

Study on the Effectiveness of Implementation of ISO 9001:2015 QMS Standard to an Educational Institution- A case study

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Abstract: Quality management systems is the systematic procedure for ensuring the product or service quality. In order to bring the consistency ,traceability and accountability in the process for gaining belief of the customer and also to improve the internal processes, International Organization of standardization brought out its first quality system standard in 1987.it was further revised in 1994, 2000, 2008 and 2015. From 2000 revision onwards the system approach is changed to the process approach which brought an element of continuous improvement in the standard in contrast to the approach of consistency that exists in 1987 and 1994 standards.Even though the standard is generic, it is widely applied to industries rather than a service sector like educational institutions. More over the definitions in the standard can easily interpreted to a manufacturing industry rather than service sector. In the present work the authors tried to map the ISO 9001:2015 standard to the educational institution with a case of implementation of the standard to the an Engineering college working under self financed category. The effectiveness of implementation of ISO standard was studied taking admission process as sample and found that the implementation is effective even in unfavourable external factors.

Key words:ISO 9001:2015, Educational Institution, Quality system standard

1.0 Introduction

During the post globalization era , the competitive advantage can only be gained by focusing on the quality of products and services [1,2]. It was realized that products alone can not assure the quality. Hence system standards were in place. First ISO standard on quality system was published in 1987 [3]. subsequently, it was revised in 1994, then in 2000, then in 2008 and the latest revision is in 2015. The major change in the standard occurred in 2000 revision in which the system approach is changed to process approach [4]. Customer satisfaction is given due importance in further revisions. Quality i.e the fitness for use is a static measure where as customer satisfaction which is defined as reaction of customer to the condition of fulfillment [5] is a dynamic one. A number of studies were conducted on the impact of implementation of ISO 9000 quality system standards on the performance of various organization [6,7,8,9]. Some of them reported positive results and some negative. There were studies that performance, product quality and customer satisfaction greatly improved by implementation of ISO 9000 quality standards especially in developing countries [10,11,12]. this is relevant to India as United Nations categorized India as lower-middle income country.

But most of the above studies is confined to industry. So effort is made in this work to investigate the effectiveness ISO 9001 QMS standard in the educational institution considering a case study. The scope the study includes the identification of processes, setting measurable parameters, monitoring them with a defined frequency and plan for the continues improvement. The institution which is considered for study was certified under QMS standard ISO 9001:2015.

2.0 Identification of processes

As clause 4.1 of ISO 9001:2015 describes the process approach, the processes are identified, measurable parameters are set, the frequency of measurement was decided and the responsibility for each process is assigned. Table 1 gives a few of the processes identified.

Table 1: A few Processes of the system along with measurable parameters, measuring frequency and responsibility

S. No	Process	Measurable parameters	Frequency	Responsibility
1.	Admission of students	1. First rank 2. Last Rank	Yearly	Head of the department
2.	Teaching and Learning	1. No. of students passed 2. No. of first classes 3. No. of distinctions	Semester	Head of the department
3.	Customer complaints	1. No of complaints received 2. No. of complaints addressed 3. No. Of complaints discarded	Semester	Head of the department
4.	Training	1. No of training programs conducted by the department 2. No. of training programmes attended by the faculty	Yearly	Head of the department
6.	Research and consultancy	1. No of sponsored research projects 2. Total Research grant received 3. Total amount of consultancy earned	Yearly	Head of the department
7.	Library utilization	1. No students' visits to the library 2. No of faculty visits to the library	Semester	Library

The measurable parameters were measured the deviations were identified and corrective & preventive actions were taken and the performance of the processes were studied for the last five years i.e. for the academic years 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21. Department of Mechanical Engineering is taken as the sample for the study of process performance.

3.0 Results and Discussion

For the admission into Engineering colleges Govt. of Telangana conducts the competitive examination TSEAMCET. Students opt for the college and the programme based on their interest and the EAMCET convener allots the seats based on the rank obtained by the students. So the first rank and the last rank admitted indicate the interest of the students on the institution. So conveys about the popularity of the institution. It depends on the brand value of the institute and its current performance.

The first and last rank of the students were obtained from a website [14] and plotted in Figure 1. Even though the best ranks were admitted in the institution under consideration, in management review meeting it was discussed to improve it further. Regarding that some steps were taken in the year 2016 such as improving the website, publishing the achievements in college magazine, displaying the department achievements in the department etc. The considerable decrease in the last rank 2017 may be attributed to these efforts. But in the years 2018, 2019 and 2020 there is a slight deterioration in the input quality. It was thought that the deterioration may be due to external factors. The external factors identified were the increase in demand of software courses and the reduction of students interest in the core branches. To ascertain the same the immediate next competitor's data is taken and analysed. The same are plotted in Fig 2 and Fig 3.

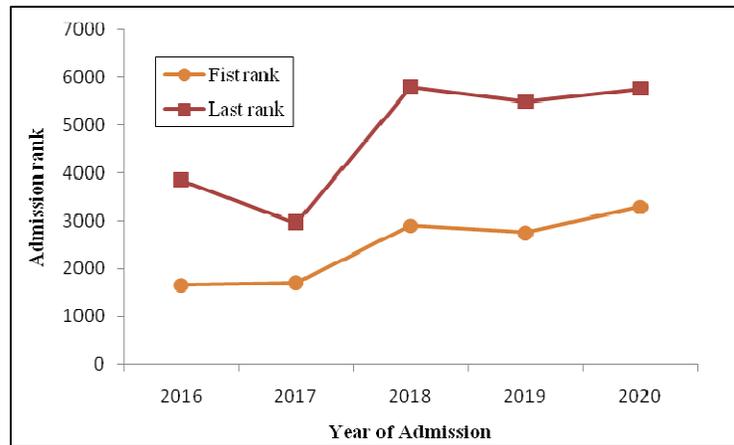


Fig 1: First and the last ranks admitted in the programme of the study considered.

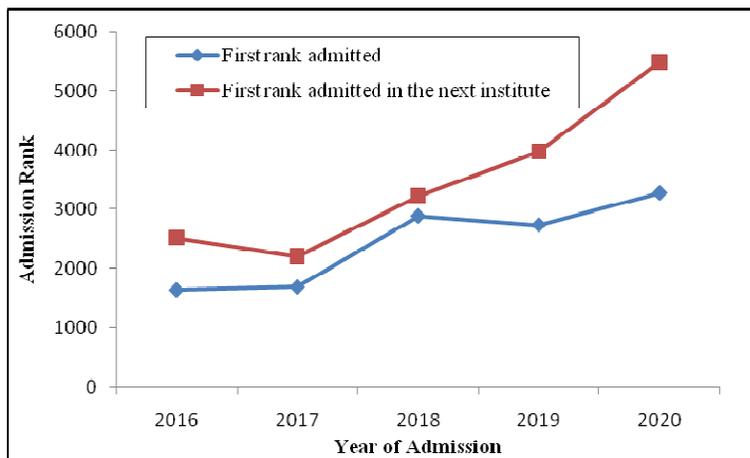


Fig 2: Comparison of first rank in the institution of study and its immediate next competitor

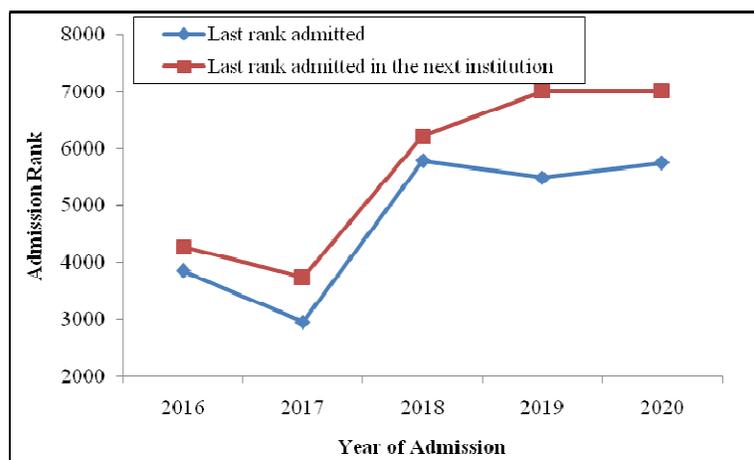


Fig 3: Comparison of last rank in the institution of study and its immediate next competitor

From the Fig 2 and Fig 3 it is noted that the deterioration of the input quality is much higher in case of the next competitor. It confirms the findings. From the Fig 2 and Fig 3 the process performance in the institute of study is much better in an odd scenario also. It may attributed to the measures taken to publicize the achievements. So the implementation of ISO standard fetched the better performance of the process even when external factors are not favorable.

Similarly all other processes listed in table 1 are studied and found that the implementation of ISO quality system standard has considerable influence in improving the performance of institution.

4.0 Conclusions

In the current work, the authors investigated the extent of effectiveness of implementation of ISO 9001 quality system standard to an educational institution. The authors have taken admission process as sample as the process is influenced not only by internal factors but also external ones. To identify the extent of effect of external factors the performance of the admission process of the immediate competitor, which is not ISO certified was analysed and compared with the institution under study. The following conclusions were made from the present work

- The input quality is slightly deteriorated for the five years of study even after implementation of ISO 9000 quality system standard. But the trend is due to external factors
- The reduction of input quality is more prevalent in the non ISO certified institution of same standard.
- Implementation ISO 9000 quality system standards found to improve the process performance when external factors do not influence the process.
- Even in case unfavourable external factors, the reduction of performance is comparatively much lesser than the non certified institutions of the same standard.

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