CHAPTER 9
RESULTS AND DISCUSSIONS

9.1 INTRODUCTION

The experience of the implementation of six sigma reported in the previous chapters revealed the practical validity of implementing six sigma concepts in Indian engineering colleges. Efforts were taken to ruthlessly follow Six Sigma DMAIC (Define, Measure, Analyze, Improve and Control) methodology for the improvement of employability and academic performance of engineering students. The results of this research are presented and discussed in this chapter.

9.2 RESULTS AND DISCUSSIONS OF SIX SIGMA ORGANISATION

The implementation of six sigma in any organisation is started with defining the organisation structure and finalising the roles and responsibilities of members. In chapter 3, it is given a suitable six sigma organisation structure applicable to self-financing private non-autonomous engineering colleges in India. The Chairman of Trusts can be designated as Six Sigma leader to initiate six sigma projects. The Principals of engineering colleges can be designated as Champion. HODs, Dean and Directors and various Section Heads may be designated as Black Belts and so on. The team was constituted to take up six sigma projects. The structure given in Chapter 3 can also be modified suitably as per the requirement of the specific college.
9.3 RESULTS AND DISCUSSIONS OF SIX SIGMA TRAINING AND DEVELOPMENT

The second stage of six sigma implementation in engineering colleges is that the need for the training, development and cultural change for the effective realisation of six sigma efforts in organisation training is essential to be given to all levels of hierarchy in the organisation. In chapter 4, it deals with the efforts that have been taken to train, develop and set a six sigma culture in engineering colleges. The training has been identified suitable to each level of hierarchy and students. The Management, Principals, HODs, Dean and Directors and students are given sufficient amount of training over a period of time.

9.4 RESULTS AND DISCUSSIONS OF TFMEA

Total Failure Modes and Effect (TFMEA) has been modified with respect to engineering college applications and presented in Chapter 6. It is developed to study the various stakeholders like students, parents, management, faculty members and their functions, roles and responsibilities.

It is considered as potential failure modes, if a stakeholder does not perform his duties properly. Failure modes lead to many problems. This model is used to identify the projects for improvement.

9.5 RESULTS AND DISCUSSIONS OF DATA COLLECTION AND DESIGNING OF I-S MODEL

Among various stakeholders identified for an engineering college, students are the most important ones and called ultimate customers. Customer
satisfaction is of prime importance to any quality system to survive. Six sigma implementation is no exception. This requirement leads this research to the measurement of satisfaction level of quality attributes and degree of importance in the improvement strategy with respect to students presented in Chapter 6. A survey form consisting of 42 quality attributes under 8 quality dimensions has been developed. Survey was conducted at two engineering colleges in Coimbatore. Results have been put in I-S model which reveals the students satisfaction level in important quality attributes. This helps in prioritising six sigma projects for quality improvement. Improvement of employability and academic performance of students are identified for immediate action.

9.6 RESULTS AND DISCUSSIONS OF ACADEMIC PERFORMANCE AND EMPLOYABILITY IMPROVEMENT

There are several six sigma projects identified through TFMEA and I_S model undertaken for implementing six sigma in engineering colleges. The improvement of the academic performance of the students is one such project which has been considered and presented in chapter 7. The implementation of Six Sigma in a private engineering college has revealed the accomplishment of significant improvements in the pass percentage of the students. In chapter 8 the employability improvement is discussed. Six Sigma served as managerial concept in finding out the shortcomings. Six Sigma has thus proved to be a business strategy and a systematic methodology to yield breakthrough improvements. The case studies reported in this research is one such evidence that shows Six Sigma efforts resulting in improved service quality.
9.7 CONCLUSION

The implementation of six sigma in self-financing private non-autonomous engineering colleges in India for the improvement of academic performance and employability revealed that six sigma efforts had resulted in improved service quality, performance of students, faculty, productivity and customer satisfaction. Thus, Six Sigma has the potential to emerge as a new wave in educational service sectors achieving breakthrough improvement in near future. Top management involvement, commitment, guidance and support in all activities will lead the entire organisation towards success. It enables the employees of engineering colleges’ i.e. faculty members to improve their commitment, loyalty and support. Both together will improve the students academic and placement performance.