

Diffusion of Juran Trilogy toward Students' Satisfaction: A Case Study at School of Technology Management and Logistic (STML)

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ABSTRACT

The quest of university quality level is a never-ending journey, which is marked by searching a set of proper criteria. One of those criteria is the university's teaching performance. The study aims to explore the teaching performance through the application of Juran Trilogy in STML, UUM. Particularly the study is aim to gain a profound understanding of STML students' satisfaction and how well the STML academicians able to satisfy the students' need. Three managerial processes of the Juran Trilogy model was used for measuring education service quality. A total of 100 respondents were randomly selected. The questionnaire was distributed to the students in STML, UUM. The data analyzed through the SPSS package. The mean score and correlation being used to answer the research objectives. The results found that the overall of the educational quality is quite satisfied with the mean score is 3.57. The study also found that mean score of Planning was 3.57, Controlling was 3.53, and Improvement was 3.62. Therefore, STML academicians should apply controlling dimension in Juran Trilogy to increase the effectiveness of education quality. In conclusion, this study able provides a good overview about Juran Trilogy in terms of quality management towards student satisfaction. To be more reliable and realistic, the future research should have to consider enhance methods such as more respondent or mix-method.

Keywords

Juran Trilogy, Education Quality, Students' Satisfaction, Quality Management, Higher Education

1.0 INTRODUCTION

Higher Education Institutions (HEIs) is the key player to produce excellent quality students. These people will become the key and viable assets to deal with fiercely nations' competitive environment. To achieve that vision, higher-education institutions (HEIs) have defined their programs and targets according to the nation's vision, such as defining the future target to be Apex University or Research University.

HEIs are also required by the Higher Education Ministries to achieve a certain level of earned soft skills for its students. Consequently, those higher-

education institutions engage in some types of evaluation to depict their quality. One of the major components in pursuing the HEIs is customer or stakeholders satisfaction.

Thus, the education quality became the critical factor for higher education at present and forced the completely different approach to the education management (Juran, 1988). Students' satisfaction surveys are very important in ascertaining higher education institutions to fulfil their mission. It is vital to consistently measure the performance of education quality from students' satisfaction because they were directly involved in the education process toward quality principles. The application of Juran's quality principles applied in the STML to improve the education quality was applied to breakthrough the education quality which can satisfy the students.

Juran Trilogy principles had been applied successfully in industrial settings for many years. Juran Trilogy can be thought of as the strategic reasoning framework that explains why all these tools and steps are necessary for the implementation of education quality. However, there are very few studies conducted in the education field. So, it would be very useful for the STML academicians, and faculty to ensure continuously improve education quality standards as required by the ISO 9001 and Quality Assurance standards in order to achieving education quality improvement.

The issues raised above requires further investigation. Therefore, the objective of this research is intended to used Juran Trilogy to evaluate the level of students' satisfaction from education provide and how well a delivered match the student expectation by STML academicians. This research result had show up the precised information about the perspective on the education quality of STML academicians. So, it can improve the education quality of STML to meet students' satisfaction. In the long run, this study will be a part of periodically and continuously evaluations and reviews series.

2.0 LITERATURE REVIEW

Quality is a dynamic and ever-changing state associated with product, service, processes, people, and environment that meets or exceeds customer

expectations (Geotsch& Davis, 2003).According to Gitlow, Oppenheim, Oppenheim and Levine (2005) quality is an emerging concept and in the past, quality meant “conformance to valid customer requirement’ – that is, as long as an output fell within acceptable limits, called specification limits.

Kaoru Ishikawa (1968) defined quality as (i) quality and customer satisfaction are the same thing; and (ii) quality is a broad concept that goes beyond just product quality to also include the quality of people, processes, and every other aspect of the organization. Quality is delivered if a product or service ability to perform to its intended function without harmful side effect (Genichi Taguchi, 1986).Alike quality is fitness for use for meeting or exceeding customers' expectation, focusing on measurement of the quality which stresses the reliability of a product or service for users (Juran&Gryna, 1988)

Again, according to Juranand Gryna(1988), the quality of education became the critical factor for famous universities (higher education) at present and forced the completely different approach to the university management. Service quality is the result of the comparison between customer expectations with their perceptions of services received (Schneider and White, 2004). Coleman (1999) also considers the quality of service can be determine based on the difference or gap between the minimum, the perception and customers' expectations on the evaluation of the quality dimensions of reliability, intangible, responsiveness, assurance and empathy and customer oriented. Furthermore,Suuroja(2003)stated that an analysis of publications on the topic of service quality reveals several heated debates about how to conceptualize and measure service quality; the issues are still up for discussion.

The rigorous scientific inquiry and the development of general service quality theory can be referred to Parasuraman, Berry and Zeithmal(Parasuraman, Zeithaml and Berry 1985). They discussed about customer satisfaction, service quality, and customer expectations. It was represented one of the first attempt to operationalize satisfaction in a theoretical context. Parasuraman, Berry and Zeithmal proposed the ratio of perceived performance to customer expectations as a key to maintain satisfied customers (Allen and Rao 2000).

Deming (2000) suggested that service quality concept should apply in education institutions. Cheng (1995) defined education quality as the set of elements in education systems that completely satisfy the strategic constituencies by meeting their expectations. According to the Michalska-Ćwiek (2009), quality of higher education is the skill to building with the abilities of assimilating the knowledge in the area to meet educational needs and implement with this knowledge to

fulfilling the satisfaction of students, lecturer and staffs in higher educational services. The education quality is very importance to makes in measurement and subsequent management. Quality is an issue that should not be avoided in education at present and what institutions do to determine quality turns out to be more important and effective of all efforts and initiatives (Basheka, Muhenda&Kittobe 2009).

For this research, the quality principles proposed by Joseph M. Juran (Juran) can be initially accepted. The quality of the educational service is the degree in which it can fulfils the constantly growing requirements and needs of surroundings as well as helps in the students' development, at simultaneous care about the solid development of didactic and scientific personnel. Joseph M. Juran's prescriptions were focus on three major aspects of the quality that called Juran Trilogy.

Quality planning is the process of understanding what the customer (student) needs and designing all aspects of a system that is able to meet those needs reliably. Quality control is to provide stability, to prevent adverse change and to “*maintain the status quo*”. We can proved with the evidence of the quality control is need by education institution. Hence, O'Neill (2003) had proved that focusing on student satisfaction not only enables universities to re-engineer their organizations to adapt to student needs, but also allows them to develop a quality system for continuously controlling and monitoring how effectively to meet or exceed student needs. Quality improvement is a process for creating and obtaining breakthrough levels of quality performance by eliminating and defects to reduce the cost of poor quality. More of institutions of higher education need to continuously improve and strengthen themselves or else they cease to be centres of academic excellence (Mpaata 2010).

In this research, application Juran Trilogy is to measure the service quality that can understand with what the student views and satisfy. Educational institutes are conducting student satisfaction survey with the aim to improve quality of education service offered to students (Low, 2000). Continuous assessment and improvement in higher education quality can focus on any dimensions of system quality. Various aspects of improved student satisfaction through improvements in aspects of teaching and administration have been well documented (Anderson, Banks & Leary, 2002; Yazici, 2004; Helms, Alvis& Willis, 2005). Gold (2001), and Emery, Kramer and Tian (2001) comment that students are the basic customers of educational institutions should offer student high quality service and education. Students' satisfaction surveys are very important in ascertaining higher education institutions are fulfilling their mission.

Relationship between education quality and student satisfaction play an important role in this research. In order to see what quality satisfies students, quality of

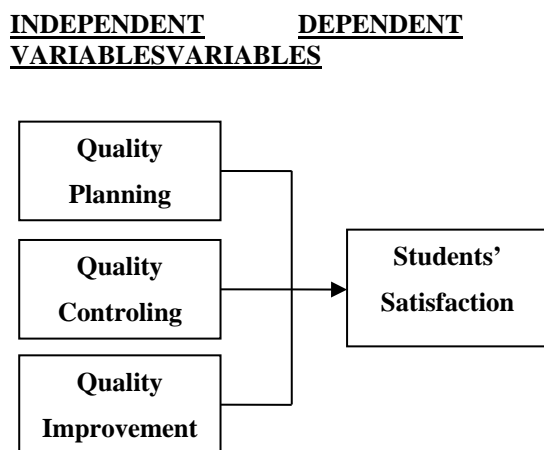
institute should be measured. In academic settings, satisfaction has been defined as the extent to which students are satisfied with a number of quality institute-related factors such as advising, teaching staffs, quality of instruction, course availability, and teaching method (Corts,Lounsbury, Saudargas& Tatum, 2000; Peterson, Wagner & Lamb, 2001;Elliott, 2003). Perceived quality and student satisfaction has direct relation with post lecture intentions of students (Banwet&Datta, 2003). This has provided two outcomes, increased teaching effort by academicians and higher levels of student satisfaction (Kanagaretnam, Mathieu &Thevaranjan, 2003).

3.0 METHODOLOGY

Research is a diligent and systemetic inquiry or investigation into a subject in order to discover the issues raised. Thus, methodology is the system of the way how researcher conduct the research. The user surveys have often been used as a tool to assess service quality and user satisfaction.

In this research, quantitative method being used by using questionnaire.The questionnaire were separated in 5 parts which are respondents' background, Planning trilogy, Controlling trilogy, Improvement trilogy, and students' satisfaction. The purpose of the data collection is to gain the data for the study, to answer the questions and solve the problem of the study. The research framework is described below.

Figure 1 : Research Framework



The above framework shows the relationship between Juran Trilogy and students' satisfaction of the education services provided by the STML. The relationship is considered as directly proportional. When the education provided by the STML to students is in quality that can meet the students' needs, it can prove to be the satisfaction of students toward to STML. In contrast, the poor quality of the education services that provided by

STML will cause to the unsatisfied among students to STML.

The population of this study are the third and final year students at School of Technology Management (STML). A 100questionnaires were distributed to the respondents. They were randomly selected through convenience sampling due to thetime constraints. Data in this study were analyzed by using descriptive method. All the data obtained from the questionnaire was used the Statistical Packages for Social Science (SPSS) version 19 help to analyzed.

4.0 FINDINGS

4.1 Respondent Background

The participants in this study were the studentsfrom Bachelor of Operation Management, Northern Univfersity of Malaysia (Universiti Utara Malaysia-UUM). They were asked to provide information about their degree, gender, age semester and race. A total of 100 questionnaires were distributed and all were returned. The results displays in Table1. It is indicated that the majority of the respondents are female (66%), semester seven and above (60.0%) and Malay (51.2%).

Table1 : Respondent Background

Bangcground	Frequency	Percent
Undergraduate	100	100
Year (20-25 Years Old)	100	100
Gender		
Male	34	34
Female	66	66
Semester		
Five	40	40
Seven @ Above	60	60
Race		
Malay	51	51
Chinese	43	43
India	6	6

4.2 Realibility test

According to Zikmund (2003), reliability analysis is important to assure the measures are free from errors in order to yield the consistent results over time and across situations. The reliability of a measure refers to its consistency, and it often taken to entail two separate aspects: external and internal reliability (Bryman and Crammer, 2001). Internal reliability is used to judge the consistency of results across items on the same test. It is particularly important in connection with multiple-item scales. Thus, the main concept of reliability analysis revolving on internal consistency and it can be seen by examining whether the items and the subsets of the items are highly correlated. As such, in this research, internal

consistency reliability test is achieved using Cronbach's Alpha. According to George and Mallery (2003), the rule of the thumb of the questionnaires can be assumed to reliable when its alpha values are at 0.7341. Sekaran (2003) argues that the closer the alpha to 1.00, the greater the consistency of variables in the instrument. Besides reliability test, validity test is also required to measure what is actually intended to measure (Bryman and Crammer, 2001). Zikmund, (2003) advocates that content of face validity is enhanced by using measures already validated in previous studies and by conducting pilot test as described earlier. The reliability test on variables is done by using factor analysis and Table 2 shows the Alpha Cronbach value for the reliability test.

Table 2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.955	.955	25

Table 3 below shows the student satisfaction level obtained from the three indicators of Juran Trilogy – planning, controlling and improvement. The table also displays the overall of students satisfaction.

4.3 Students Satisfaction

Table 3: Level of education quality on Juran Trilogy

Variables	Mean
Planning	3.57
Controlling	3.53
Improvement	3.62
Overall of education quality on Juran Trilogy	3.57

The main purpose of this exploratory study is to determine the satisfaction of education quality that provided by research STML based on Juran Trilogy. Based on the study, the findings result had shown that the overall of the education quality that provided by STML to their students are slightly good. The result also shows that the overall of the education quality that provided by STML are quite satisfied by the respondents.

The overall of education quality on Juran Trilogy is quite good with mean score of 3.57. In the table above, the result shown that education quality on Improvement trilogy is higher compare to other two trilogies which mean is 3.62. It can be shows that the STML academician conducting student satisfaction survey to improve their management is an effective way to helped in improvement. Follow by planning trilogy which has mean 3.57, student feel that the STML academicians have determines the quality goals, implement the planning, resources planning to develop products to meet students' needs.

The study found, the Improvement trilogy is the first priority dimension from respondents' perspective. However, STML academicians should do more controlling to increase the effectiveness of education quality in order to fulfil students' satisfaction. Therefore, STML should maintain entire dimension and focused on the concept of continuous improvement toward Juran Trilogy at STML to enable meet students' need and satisfaction.

5.0 DISCUSSION & CONCLUSION

The result shows that improvement trilogy is the priority important indicator. According to Low (2000), in order to increase the education quality, the educational institutes need to conduct student satisfaction survey with the aim to improve quality of education service offered to students. From the descriptive analysis result which had proved that 62% of respondents agreed with the STML academician conducting student satisfaction survey to improve their management and it is the highest mean score at improvement trilogy with 3.69. It shows that STML students think to conduct the survey to collect more information can more improve the education quality which offered to students. Therefore, conducted the survey, continuous to assess and improve, focused on some dimensions can help to improve the education quality in STML.

Next is followed by planning trilogy which has mean score of 3.57. According to Juran (1986), he found that the quality planning phase is the activity of determine the quality goals, implementation of the planning, resources planning to developing products and processes to meet customers' (students') needs. Through the descriptive result, the highest mean score in planning trilogy is 3.68 with 56% of respondents agreed that the STML academicians have determines the quality goals, implement the planning, resources planning to develop products to meet students' needs. It deals with setting a goals and establishing the means required to reach the goals and satisfy the customer's (student) requirement. So that, the STML academicians have to achieved the planning objective to meet students need and satisfy them.

Lastly, controlling trilogy had shown the lower mean score in analysis which is 3.53, but it still consider as satisfied point of scale, this is because it had exceed than 3.5. According to Juran in year 1988, he stated that quality control is to provide stability, to prevent adverse change and to "maintain the status quo". The findings result proved that the highest mean at controlling trilogy is 3.58 in which 55% respondent feel the STML academician adopted stability management, to prevent adverse change and to "maintain the status quo". From this result, it can be show that STML had done the controlling trilogy in education quality, but just not very satisfied by STML students. STML academicians may prevent the adverse change to get

worst result, and maintain the good education quality in STML.

The students are only judges in the education quality based on Juran Trilogy, and their satisfaction toward the education quality which had provided by the STML academicians. Therefore, quantitative method had been used in this study to obtain the relevant data from STML in order to identify the education quality based on Juran Trilogy which can satisfied the STML students. The STML academicians should do more continuous improvement in Controlling to enhance education quality, and maintain the Planning and Improvement trilogy in education quality of STML to fulfill students' satisfaction. The implementation of Juran Trilogy model can be easily applied by other school to evaluate education quality performance and students' satisfaction. Juran Trilogy is a good tool for use in analyzing quality attributes in order to make better decisions on quality strategies. Beyond that, Juran Trilogy is not only useful practical tool for industries, but it also useful for education institutions.

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