

A Beneficiary-Driven and Recipient-Focused Program Using ISO 9001:2000 in Teaching and Learning in Malaysian University

Dr. Khalid Ismail, Faculty of Business and Economic, Universiti Pendidikan Sultan Idris, Malaysia
Dr. Kamisan Gadar, Faculty of Business and Economic, Universiti Pendidikan Sultan Idris, Malaysia

ABSTRACT

The ISO 9001:2000 Quality Management System (QMS) has been widely implemented in higher education institutions (HEIs) in Malaysia in order to gain stakeholders' confidence and to maintain their quality of teaching and learning. Due to its concerns on meeting and enhancing customer satisfaction, the ISO 9001:2000 provides a framework for establishing a beneficiary-driven and recipient-focused academic program. A model has been developed and implemented to highlight the importance of meeting requirements of beneficiaries and recipients consistently. The model integrates beneficiary-driven and recipients focused process, effective academic monitoring system, measurement of key performance indicators and program evaluation, continuous quality audit and continuous improvement. The advantages of this model include beneficiaries' recognition and confidence, conformance to specified criteria and standard of quality assurance; systematic monitoring of teaching and learning processes, continuous suitability of the programs with market demand and effective monitoring of students' performance that support students to complete their study. However, the implementation of this model has encountered several problems such as rigidity in handling teaching and other academic matters, difficulties in measuring the learning outcomes, getting cooperation from each lecturer involved in the delivery of program, active and direct involvement of stakeholders and lack of student initiatives to grab opportunities for their academic achievement.

INTRODUCTION

Currently is a widespread interest in the ISO 9001:2000 QMS due to the standardization and requirement of quality objective. The ISO 9000 QMS was introduced in October 2000 is more generic and flexible in nature, and has both customer requirements and customer satisfaction as an integral part of the standards (Idrus, 2001). The ISO 9000 focuses on designing and establishing a quality management system to meet and enhance the requirements of the customers, organizations and other interested parties. Although quality management system has its origin in the manufacturing industry, it is now more global in scope and permeates through all sectors of the economy including universities. In fact, the Baldrige Award, the Deming Prize and the ISO 9000 standards can also be applied in an educational setting (Izadi, Kashef and Stadt, 1995).

Implementing ISO-QMS in a university requires the institution to establish a quality management system to ensure that all activities and processes in teaching and learning meet the specified requirements consistently. The ISO 9001:2000 provides a framework for a university to direct and control all processes and resources specified by statutory bodies, internal and external customers, stakeholders and prospective employers are met. The ISO 9001:2000 can also be regarded as one of the approaches towards achieving best practices in teaching and learning. It focuses on both quality assurance design of a quality management system. This leads to the achievement of customers' or beneficiaries' satisfaction through incorporating their requirements in the system and measuring whether or not their satisfaction is achieved continuously. Thus, adopting the ISO 9001:2000 will ensure the teaching and learning processes are of creditable standards and quality (Hariri Kamis et al, 2003). This paper is to discuss the implementation of best practices in the teaching and learning processes in Malaysian university.

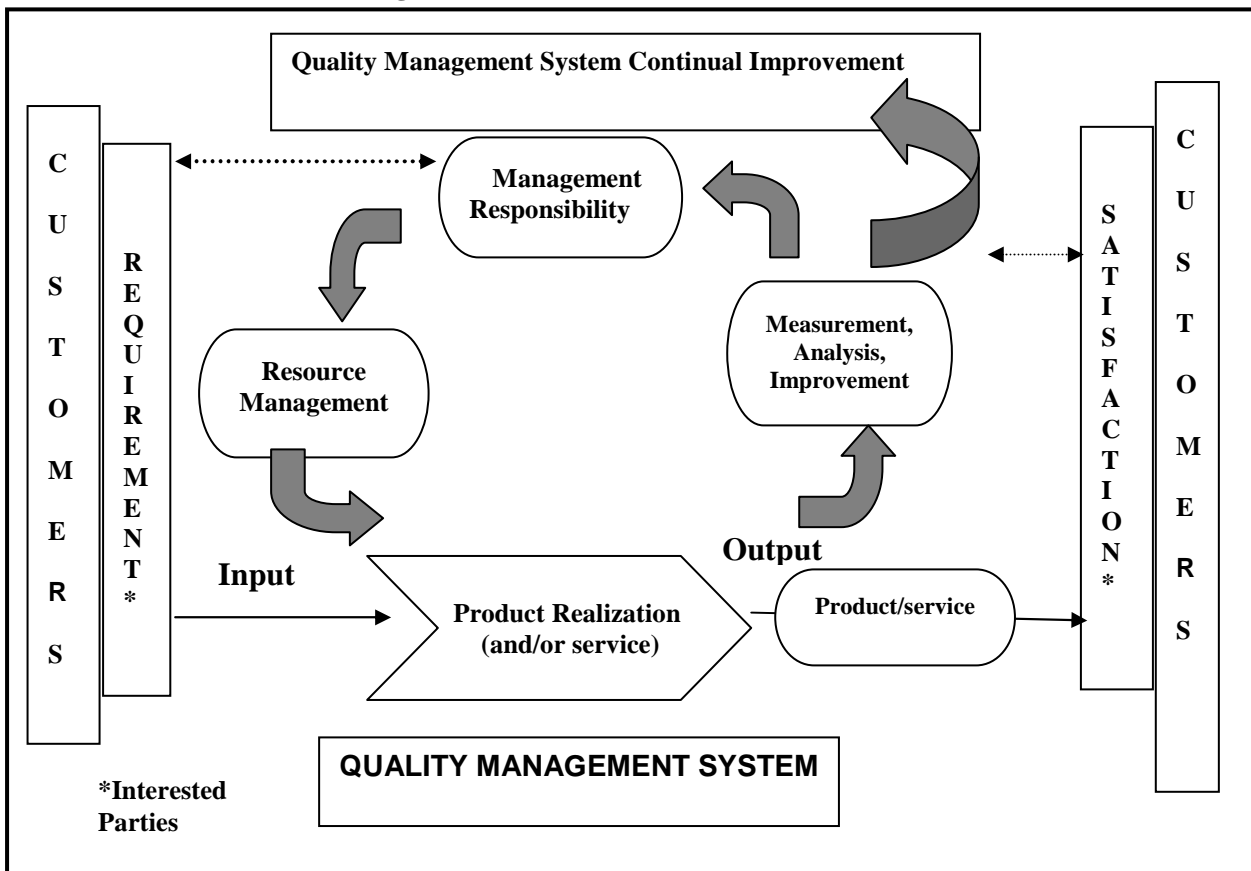
MODEL OF ISO 9001:2000

The ISO 9001:2000 is a process model integrating four major components (management responsibility, resources management, product /service realization, and measurement, analysis, and improvement) as shown in Figure 1. The model emphasizes on the following:

1. The importance of identifying and understanding the needs and expectations of customers as well as other parties to ensure that their requirements are being met.
2. The commitment of top management to support the implementation of the quality management system and to continuously improve the system.

3. The effective utilization of organizational resources in implementing the quality management system.
4. The control of the product and/or service realization process to ensure all requirements is being met consistently.
5. The measurements of quality management system processes to determine the effectiveness of the system and improvement opportunities.

Figure 1. Process-Based Model of ISO 9001:2000



Source: Mohd. Shoki Md. Ariff et. al (2001)

←.....→ Value-adding activities
 → Information flow

The customers are parents, society, and industry which employed graduates of universities. However, Quentin (2000) regards all these 'customers' as beneficiaries of education. Designing best practices in teaching and learning using ISO 9001:2000 framework requires an education institution to carefully determine beneficiaries' requirements and to translate those requirements in the academic curriculum. Subsequently, all teaching and learning activities including evaluation and assessment methods, modules and class delivery must be focused on meeting the specified requirements. Any changes in the requirements of these beneficiaries of education must be continuously monitored and adjustments be made to curriculum and other teaching activities accordingly. This is referred as beneficiaries-driven teaching and learning.

Oldfield et al (2000) refers students as recipients, not customers. They are the one who directly involve in teaching and learning activities, but not defining the specific requirements for a program. Although many quality management system regarded students as customers but they are not involve in a university business process setting programs. They also cannot specify to the university how the course should be run or how assessment should take place. Some argues students as internal customers since they are the ones who use services like supervision, class delivery, academic advisory and other academic related services as well as receiving the output of the teaching and learning process; such as modules, examination questions, etc. With respect to this, treating students as recipients, as proposed by Quentin (2000) would be most appropriate. As they are the one who are directly involved in academic services and receive the teaching process output, implementing best practices in teaching and learning should be recipient-focused.

Designing and implementing ISO 9001:2000 for higher education should take into consideration of beneficiaries-driven and recipient-focused. For this purpose, as the ISO 9001:2000 certification, a conceptual model has been developed and used by the Faculty.

Beneficiaries' requirements referred to industries, government agencies, and other related agencies that employ the graduates; and professional and statutory bodies. To identify the requirement of beneficiaries the tools require include market analysis, needs analysis and feedback.

The requirements stipulated by the respective and varied beneficiaries serve as integral input to best practices and must be translated into the curriculum design. The curriculum design must be up-dated and modified in line with the demands and the development of the beneficiaries. It must reflect the knowledge, skills, attitude, and so on that the beneficiaries want.

To establish best practices in teaching and learning process, the focus is given to the 3Ps (People, Process, and Product). People refer to creativity in the classroom environment as well as competency and expertise of the lecturers. The process means the teaching and learning activities in producing quality graduates. Finally, the product refers to will ensure graduates of faculty.

Quality process output and services refer to examination papers, teaching modules, course work materials, delivery of lectures, supervision, registration of subjects, marks management. All process outputs and services must meet quality standards stipulated in the quality management system documents, customer's charter and quality objectives. As a measure of quality process output and services, end of semester teaching evaluation and quality services survey were conducted to tap information regarding the extent to which students or recipients are satisfied.

Output refers to the ultimate product or result of teaching and learning such as the quality of graduates in terms of knowledge, skills, attitude, and other relevant qualities. Beneficiary's satisfaction refers to the effectiveness of the teaching and learning process and the entire quality management system, including surveys, assessment by professional and statutory bodies and practical training reports.

APPLICATION THE ISO 9001:2000 IN UNIVERSITY

All the ISO 9001:2000 requirements are generic and are intended to be applicable to all organizations, regardless of type, size and product or service provided. Generally, the application of ISO 9001:2000 major clauses and requirements in higher education setting are explained in Table 1.

Table 1. ISO 9001:2000 Major Clauses

The major clauses	Requirements
Clause 4: Quality Management System	This clause requires a quality manual, procedures required by the ISO standard, procedures for effective implementation and monitoring of teaching and record to provide evidence of effectiveness of the quality system be developed and maintained.
Clause 5: Management Responsibility	The top management of an educational institution must demonstrate its commitment to the establishment and implementation of the quality management system for teaching and learning and to continuously improve the effectiveness and efficiency of the system.
Clause 5.3: Total staff requirement per program	Minimum requirement at any one time is 11 staff or follow basis for determination of staff requirement.
Clause 5.4.1: Academic staff to student ratio	1 : 16 students
Clause 6: Resource Management	Resources including human resource, financial, equipment, utilities, hardware and software must be determined and adequately provided to ensure conformity of programs, teaching and learning process, output and graduates and quality management system of an institution to specified requirements.
Clause 7: Product and/or service realization	Product and/or service realization is the process that will convert the customer requirements into an output that is both acceptable to the customer and one that would not jeopardize the quality. Output refers to the product and/or service that is a result of product realization and one that fulfils the customer requirements. In an educational setting, this clause specifically covers all processes in teaching and learning, administration and academic services.
Clause 8: Measurement,	At each step along the teaching and learning, some form of measurement and

that one essential element that should be incorporated when designing a quality assurance or a quality management system is a mission statement. Therefore, a mission-based quality management system must be considered by educational institutions when designing and implementing ISO 9001:2000 quality management system for teaching and learning.

The Malaysian university's mission reads as **“to produce competent graduates capable of managing technology and answerable to the society”**. Towards the realization the mission, the university has formulated long-term and short-term plans and established goals and objectives to be attained by 2010. The goals and objectives of the Faculty are then translated into university quality policy and quality objectives. The formulations of quality objectives are consistent with the mission and quality policy as required by MS ISO 9001:2000 QMS – requirements: Clause 5.4.1. This reflects university's effort and commitment to develop a mission-based quality management system.

In designing and establishing a quality management system, the mission of an organization is an important input and must be incorporated in the system. Goodstein, Nolan and Pfeifer (1993) refer the concept of mission as one expression of why an organization exists and why it competes in certain sectors or industries and not in others. Therefore, mission involves a clear statement of what business the organization is in and what the organization is attempting to achieve in the industry. ISO 9001:2000 clause 5.3 specifically requires an organization to establish a quality policy that is consistent with the purpose or mission of the organization. The formulation of quality objectives that are measurable and consistent with the quality policy is a requirement of clause 5.4.1. Therefore, the development of ISO 9001:2000 QMS for teaching and learning process should focus on the achievement of results, in relation to quality objectives, to satisfy needs, expectations and requirements of beneficiaries and other interested parties and serve as a means to achieve the institution mission. In fact, this reflects top management commitment to the implementation of a quality management system.

The Effective Academic Monitoring

Apart from being beneficiaries-driven and recipient focus, the establishment of an effective academic monitoring is crucial to ensure all planned results are attained. Effective academic monitoring involves monitoring of class delivery, effectiveness of teaching, students' performance and quality of process output. Data resulting from the monitoring activities provide an input regarding how effective and efficient the teaching and learning is being carried out. Corrective action should be taken accordingly based on analysis of this data to ensure smooth operation of teaching activities, attainment of service standard and relevant quality objectives.

Key Performance Indicators of Teaching and Learning

Performance indicators to indicate how well a process or product meet specified requirements should be determined. Subsequently, the measurement of key performance indicators of teaching and learning should take place. This measurement will provide information regarding effectiveness of the QMS.

Audits

Audits are crucial to determine whether or not the institution quality management system is effectively implemented and whether it is able to achieve the organizational mission. An audit is a systematic, independent and documented process for obtaining audit evidence and evaluating processes objectively. This is in order to determine the extent to which audit criteria are fulfilled (MS ISO 9001:2000). Audit evidence includes verifiable records, statements of fact or other information. An institution can implement audits and use the audit findings to ensure not only compliance to quality assurance standards and procedures, but also more importantly to determine the effectiveness of the quality management system in relation to its contributions towards the attainment of the organizational mission, goals and quality objectives. In fact, audit results form a key input in determining where opportunities lie for continual improvement (Cianfrani, Tsiakals and West, 2000).

Continual improvement

It refers to recurring activities that increase the ability to fulfill requirements (Cianfrani, et al., 2000). This is the key requirement for sustaining the institution journey towards achieving the aspired future state. Continual improvement is also one of the eight quality management principles of ISO 9001:2000 and it should be a permanent objective of an organization to continuously enhance the organization overall performance and effectiveness and efficiency of the QMS.

Thus, best practices in teaching and learning using ISO 9001:2000 QMS not only be beneficiary-driven and recipient-focus, but also need to take into consideration the integration of mission statement into the QMS; the establishment of an effective academic monitoring; the measurement of key performance indicators of teaching and learning; the implementation of continuous quality audit and the adherence to the principles and practices of continual improvement to achieve organizational mission and strategic goals. The university's beneficiary-driven and recipient-

focus model of best practices in teaching and learning have incorporated all these requirements in its ISO 9001:2000 quality management system (see Figure 1).

MEASURING BENEFICIARIES SATISFACTION

As one of the measurements of the performance of the teaching and learning, an education institution should monitor information relating to beneficiaries perception as to whether the institution has met their requirements. If employers, industries (beneficiaries) are satisfied with the graduates of a faculty's programs, they may continue relationships and support (Izadi, Kashef and Stadt, 1995). In addition, measuring beneficiary's satisfaction is a mandatory requirement of ISO 9001:2000 as stipulated in Clause 8.2.1. Responding to this, university constantly conduct studies to measure beneficiaries satisfaction with regard to the quality of its graduates in term of knowledge and skills in the respective field of study, leadership quality, communicative ability and cooperation with colleagues (Maimunah Ali et.al 2001). Specifically, attributes for measuring beneficiary's satisfaction are as expertise of graduates, approachable graduates, knowledgeable graduates, creativity of graduates, committed and motivated graduated, accountability graduates, personality of graduates, etc.

In addition, beneficiaries' opinions are gathered through reports from external supervisors on students who undergo practical training; needs analysis carried out during the design state of the course/curriculum and questionnaires distributed by university Alumni to the present employers of the graduates. Any suggestions and complaints by the customers were considered, assessed and wherever necessary, incorporated into the teaching and learning process. Only with such objective assessment of such feedback could the university adhere to the principles of best practices and hence, practices continuous improvement.

MEASURING RECIPIENT SATISFACTION

As highlighted in the model of beneficiaries-driven and recipients-focus teaching and learning using ISO 9001:2000 quality management system (Figure 1), best practices in teaching and learning process should also be recipient-focus. Process approach is one importance quality management principle of ISO 9001:2000. The process-focus regards students as recipient as they are the ones who receive output of the teaching and learning process and directly receive administrative and academic services from a faculty's staff. The output of teaching and learning process includes teaching materials, modules, class delivery, project papers and other academic related services. These outputs must meet quality standards and must be consistent with the curriculum designed. This approach is consistent with ISO 9001:2000 which clearly focuses on controlling the processes of a QMS and output of those processes. As such, even though students or recipients cannot set education specification or curriculum, it is very important for a faculty to tap information regarding the extent to which they are satisfied and effectiveness of class delivery.

For this purpose, each semester the students are asked to respond to a set of questionnaire that aims to solicit information concerning the following attributes:

1. **Lecturer's preparation:** sufficient teaching & learning materials, continuance, organization, teaching aids.
2. **Lecturer's delivery:** variety of teaching and learning techniques, confident, interesting.
3. **Lecturer's evaluation method:** organized assessment, students are made aware of mode of assessment and assessment wholly based on lectures.
4. **Teaching organization:** course outline distributed during first week, keep to schedule, on time, delivers lectures.
5. **Lecturer- student relationship:** available, lecturer willing to listen to students' suggestions, open minded good rapport.

Information regarding lecturer's performance based on the above questionnaire was then used to identify further improvement in the delivery of teaching and learning activities. Such improvements include identification of training needs and teaching aid equipment to enhance the teaching and learning process.

According to Spanbauer (1992), students or recipients have long been concerned regarding quality of higher education in term of administration and educational resources of higher education institutions. This reflects that quality of administration and academic services and adequacy of educational resources must be maintained. As Sutcliffe and Pollock (1992) suggest, student or recipients perceptions of an institute should be sought actively by all levels to ensure that as much as possible is being done to enhance educational experiences within available resources. To tap recipients' perception of quality of education in term of services and educational resources, regular surveys must be conducted and dialogues with students performed continuously.

Deming (in Izadi, Kashef and Stadt, 1995) encourage educators to create environments in which strong relationships of mutual respect and trust replace anxiety, suspicion, and separation. In fact, the TQM motto in education is learn what the students need and constantly improve the educational processes to deliver it consistently. By measuring and analyzing quality of services, educational resources and effectiveness of class delivery, the university utilizes the information for taking corrective action and continuous improvement effort to enhance satisfaction of recipient and foster good relationship with students.

CONTINUOUS QUALITY AUDIT

Audits are used to determine the extent to which the QMS requirements are fulfilled whilst audit findings are used to assess the effectiveness of the QMS system and to identify opportunities for improvement (MS ISO 9000:2000; QMS). The implementation of audit is a requirement of ISO 9001:2000 as specified in Clause 8.2.2. In ISO 9001:2000, audits can be performed as;

1. First-party audits or internal audits which are conducted by, or on behalf of, the institution itself for internal purposes and can form the basis for an organization's self-declaration of conformity;
2. Second-party audits are conducted by customers of the institution or by other persons on behalf of the customer and;
3. Third-party audits conducted by external independent organizations which provide certification or registration of conformity with requirements such as those of ISO 9001:2000 QMS.

For teaching and learning, audits are conducted at two different levels, namely internal audit and third-party audit by SIRIM (Standard and Industrial Research Institute of Malaysia). The internal audits are performed by internal auditors (university staff) who are independent from the area or process being audited. Where by the third party audits conducted by external independent organizations which provide certification or registration of conformity with requirements of ISO-9001:2000 QMS. These audits are conducted at least once a year and cover all teaching and learning activities. In auditing processes the audit findings are important because the findings demonstrate compliance of university's quality management system to quality assurance standards, service standards and the effectiveness of the system in meeting customers' and all interested parties' requirements. At the same time, results of the audits also indicated nonconformities in teaching and learning processes that need immediate corrective actions. Some areas were also highlighted in the findings for further improvement in the teaching and learning processes.

CONTINUOUS IMPROVEMENT

The aim of continual improvement of ISO 9001:2000 QMS is to increase the probability of enhancing the satisfaction of customers and other interested parties. This can be achieved through:

1. The implementation of correction measures to eliminate a detected nonconformity and corrective action to eliminate the cause of a detected nonconformity or other undesirable situation in order to prevent recurrence.
2. The execution of preventive action to eliminate the cause of a potential nonconformity or other undesirable potential situation.
3. The improvement of quality management system processes by reviewing the quality policy and objectives, quality assurance standard, adding value to products and services to customers and the setting-up of higher organizational targets.

In the context of teaching and learning, improvements must be focused on the following 3P's: Product, Process and People:

1. Product which covers enhancing quality of graduates and improving process products, which involves the quality of examination papers, the undergraduate projects, course work materials and practical training.
2. Process which involves improvement in the teaching and learning activities in producing quality graduates. Such improvement includes the introduction of new ways of class delivery, the enhancement of students' evaluation methods, the adjustment of course curriculum to match changes in the needs and requirements of customers and professional bodies.
3. People who involves effort to increase staff competency in delivering academic courses and management of academic related activities and processes.

Such improvements carried out through taking corrective and preventive actions based on the audit findings, feedback from customers and other interested parties, data regarding the achievement of quality objectives and suggestions from faculty staff.

CONCLUSION

The paper has considered ISO 9001:2000 QMS as a framework for the public university to design and implement best practices in teaching and learning. The focus of implementing best practices in teaching and learning process using ISO 9001:2000 emphasizes on consistently meeting recipients and beneficiaries' requirements. Adopting best practices in teaching and learning in higher education institutions using ISO 9001:2000 will ensure that all academic standards are fulfilled; efficient teaching and learning activities through academic monitoring, measurement, analysis and improvement of key performance indicators and activities at each step of the QMS; recipient' and beneficiaries satisfaction is achieved by continuously meeting their requirements. With the introduction of quality assurance criteria and standards for public universities by the Ministry of Higher Education, similar to the Quality Assurance Agency in the United Kingdom and the Unified Higher Education System in Australia, will certainly enhance the university ISO-QMS adherence to a common and high education standards in delivering academic courses. In continuing the quality journey and ensuring quality of the highest creditable and standards, the university is continuously improve its teaching and learning effectiveness and efficiency by embarking on benchmarking projects with renowned education institutions to ensure it is of a world class standard.

REFERENCES

- Cianfrani, C.A., Tsiakals, J.J. and West, E. (2000) ISO 9001:2000 Explained. Second Edition. ASQ Quality Press, Wisconsin
- Dalela, S. and Saurabh. (1997) ISO 9000: A Manual for Total Quality Management. Chand and Company Limited, New Delhi
- Freeman, R. (1993) Quality Assurance in Teaching and Education. Kogan Page, London.
- Goodstein L.D., Nolan T.M. and Pfeifer J.W. (1993) Applied Strategic Planning. McGraw Hill, Inc. New York
- Hoyle, M. (1994) ISO 9000 Quality Systems Handbook 2ed. Oxford:Butterworth-Heinemann Ltd.
- Hari Kamis, Khalid Ismail, Mohd. Shoki Md. Ariff, Zainab Khalifah (2003). Evaluating the Quality of Higher Education in a Business and Economics Faculty: The Students' Perspective. Paper presented at the Proceeding of The 2nd International Conference On Quality Assurance and Accountability in Higher Education.
- Idrus, N. (2001) A Model for Assuring Quality of Higher Education Institutions. Paper presented at the SEAAIR Conference, Oct. 2001, Kucing, Sarawak.
- Izadi, M., Kashef, A. and Stadt, R.W. (1995) Quality in Higher Education: Lessons Learned from the Baldrige Award, Deeming Prize, and ISO 9000 Registration, Journal of Industrial Teacher Education 33(2), pp 60-76
- Kanji, G.K., and Abdul Malek A Thambi (1999) Total Quality Management in UK Higher Institutions, Total Quality Management, Vol 10 (1), pp 129-153.
- Maimunah Ali, Noor Abidah Mohd. Omar, Mohd. Shoki Mohd Arif, Norzarina Sulong and Zainab Khalifah, Strategies for Total Employee Involvement in Ensuring Quality in Tertiary Education. Paper presented at the SEAAIR Conference, Oct. 2001, Kucing, Sarawak.
- Mohd. Shoki Md. Ariff, Norzarina Sulong, Assoc. Prof. Dr. Zainab Khalifah, Assoc. Prof. Dr. Noor Abidah Mohd. Omar (2001), Designing Best Practices For Teaching and Learning Using A Quality Management System Framework; The ISO 9001:2000 Approaches. Paper presented at the SEAAIR Conference, October 2001, Kuching, Sarawak.
- MS ISO 9000:2000; Quality Management System – Fundamentals and Vocabulary (2000). Department of Standards Malaysia, Kuala Lumpur.
- MS ISO 9001:2000; Quality Management System – Requirements (2000). Department of Standards Malaysia, Kuala Lumpur.
- Oldfield, B. and Baron, S. (2000) "Student Perceptions of Service Quality in a UK University Business and Management Faculty", Quality Assurance in Education Vol. 8 No. 2, pp. 85 – 95.
- Quigley, J.V. (1993) Vision McGraw Hill Inc., New York
- Quality Assurance Division (2002) Quality Assurance In Public Universities of Malaysia; Code of Practice, Higher Education Department, Ministry of Education.
- Quentin S.J. (2000) A Quality Education Is Not Customer Driven. Journal of Education for Business, May/June 2000, Vol. 75 Issues 5.
- Smart, D., Sim, M. and McMahon, L. (2001) Quality Assurance in Australian Higher Education: Evolution and Emerging Issues, Paper presented at the SEAAIR Conference, October 2001, Kucing, Sarawak.
- Spanbauer S.J. (1992) A Quality System for Education ASQC, Milwaukee
- Sutcliffe, W. and Pollock, J. (1992) Can the Total Quality Management Approach Used in Industry Be Transferred to Institutions of Higher Education? The Vocational Aspects of Education, 44(1), 11 – 27.