

## Complying Quality Management System ISO 9000 Requirements Within Higher Education Institutions (HEIs) in Muslim Countries

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**Abstract:** Malaysia is acknowledged by other Muslim countries and referred to as being the most developed and progressive Muslim country in respect of politics, administration, economics and social development. Malaysia nowadays is considered as a model among Muslim countries in implementing quality systems in Higher Education Institutions (HEIs). The aim of this paper is to investigate how Higher Education Institutions (HEIs) in Malaysia are complying with quality management system ISO 9000 requirements. This paper also discusses the elements of organisational culture that are involved in ISO 9000 implementation and maintenance. A qualitative approach and case study strategy was used to investigate the phenomenon in one ISO 9000 certified university in Malaysia. Interviews were employed as the main data collection to obtain in-depth information in respect of the subject investigated. The study found that many activities were undertaken to fulfil ISO 9000 requirements. It was also discovered that there are elements of organisational culture involved in ISO 9000 implementation. This study adds to the knowledge of ISO 9000 implementation within HEIs in Muslim countries. The findings from this paper can be employed by managers in HEIs in Muslim countries as a guideline in their endeavour to implement effective quality programmes. This is crucial as Muslim countries are currently putting tremendous efforts into improving the quality of their respective HEIs. Quality improvement is paramount to locate HEIs in Muslim countries on the global map on a par with HEIs in western countries.

**Key words:** Quality system • ISO 9000 • Muslim countries • Higher education institution • Malaysia

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### INTRODUCTION

Malaysia is acknowledged by other Muslim countries and referred to as being the most developed and progressive Muslim country in respect of politics, administration, economics and social development. Malaysia is also well known internationally as being among the few Muslim countries that have introduced and established an Islamic financial system. History is being created again as, nowadays, Malaysia is seen as a model among Muslim countries in implementing quality systems in Higher Education Institutions (HEIs). The objective of this paper is to investigate how Higher Education Institutions (HEIs) in Malaysia are complying with the requirements of quality management system ISO 9000, i.e., quality management system, management commitment, resource management, product realisation and continuous improvement. This paper also discusses the elements of organisational culture involved in ISO 9000 implementation and maintenance.

Malaysia is situated in South East Asia and its population is 27.468 million. In 2009, the economic growth was 5.7% [1]. The major production and exports of Malaysia are crude petroleum, palm oil, rubber, sawn logs, tin, black pepper, liquefied natural gas (LNG) and natural gas [2].

Malaysia boasts one of Southeast Asia's most vibrant economies, the fruit of decades of industrial growth and political stability. Its multi-ethnic, multi-religious society encompasses a majority Muslim population in most of its states [3]. The Malaysian constitution guarantees freedom of religion while making Islam the state religion. According to the Population and Housing Census 2000 figures, ethnicity and religious beliefs correlate highly. Approximately 60.4% of the population are practicing Islam; 19.2% Buddhism; 9.1% Christianity; 6.3% Hinduism; and 2.6% practice Confucianism, Taoism and other traditional Chinese religions [4].

### **Quality Assurance Needs in Higher Education Institutions in Islamic Countries:**

The past two decades have witnessed a vast expansion of higher education in Islamic countries in education, as a necessary condition for economic growth. Countries have rapidly expanded their access to higher education and shifting from public to private education has been accepted by both the community and the market. The balance between increased access to higher education and quality has become one of the most important factors in the reform of higher education [5]. There has been demand for quality improvement in higher education in Muslim countries. For instance, Professor Ekmeleddin Ihsanoglu, Secretary General of the Organisation of the Islamic Conference (OIC), called upon Muslim countries to strive for quality education that promotes creativity and innovation and to increase their expenditure of research and development [6]. The demand was also raised by the Director General of the Islamic Educational, Scientific and Cultural Organization (ISESCO) when he urged Muslim scholars to focus on initiatives to improve quality in higher education research and innovation in advanced emerging technologies so as to formulate a combined strategic vision for the future of science and higher education in Islamic countries [7].

There are various reasons why Islamic countries need quality assurance in higher education [5]:

- Quality assurance in higher education in Islamic countries at the governmental level is necessary as a driving force to reform higher education. It can be a way to rank universities at the national level and can have an impact on the competition between universities.
- As a process to gather information about the level of higher education in the countries that allows governments to design a proper and accurate improvement plan for higher education. This practice is one of the most important milestones to upgrade any country.
- Globalization has triggered the need to produce a quality that is compatible with the open work market place in other countries. Internationalization of higher education institutions has brought the need to ensure the quality of higher education systems.
- To enhance and improve student learning and to ensure that the HEIs are meeting their mission and that they are compliant with the national, regional or international standards.
- Quality assurance is needed to control and improve the rapidly growing private institutions.

Efforts have been taken by Muslim countries to fulfil the request for quality higher education. For instance, the 5<sup>th</sup> Islamic Conference of Ministers of Higher Education and Scientific Research (ICMHESR) in 2010, which was held in Kuala Lumpur and ended with a firm resolution and declaration to continuously work together towards nurturing quality and fostering prosperity of *ummah* in the Islamic world. Some of the main items in the Declaration include the call to universities in the Islamic world to upgrade their performance to achieve excellence and international standards by focusing on Key Performance Indicators (KPI), the need to adopt emerging and innovative technologies, such as nanotechnology and the urgency to formulate enabling policies that transform states into knowledge-based economies [7].

The Islamic population is growing fast and has spread into Asia, Africa, the Middle East, Europe and even the USA and Canada. There are currently more than 57 Muslim countries in the world. The Islamic population in Asian countries constitutes more than two thirds of the Islamic population of the world. There are both diversities and commonalities in the Muslim world in the field of higher education. The diversities are due to the different stages of development of quality assurance, the size of population, the economic capacity, the access to higher education, the political situation and the rapidly changing social demands. The state of quality assurance in Muslim countries is different but as a whole it can be divided into three levels: countries that have established their quality assurance agencies, countries on their way to establishing quality assurance and countries that have not yet started their first step [7].

Developing higher education structures requires quality assurance at the level of the entire set of its components and within the framework of system analysis relative to inputs, processes and outcomes. Quality management is subject to a set of requirements, some of which are [8]:

- The commitment of all actors inside and outside the higher education institution to engage in the total quality management system and the full awareness of the requirements of this choice.
- Establishing strong and efficient leadership to ensure “*less administration and more leadership*”. In this sense, leadership stands for the capacity to motivate the talents of all stakeholders of the quality system to achieve the set goals and the capacity of the leader to serve his or his clients.

**Higher Education Institutions in Malaysia:** Higher Education (HE) in Malaysia can be traced back to 1900 with the formation of the King Edward Medical School and Raffles College in Singapore. The University of Malaya was established through the integration of both colleges in 1949. In 1962, the university was divided into two. It was known as the University of Malaya in Kuala Lumpur and University of Singapore in Singapore. Until 1984, there were seven public universities in Malaysia [9]. This amount has increased tremendously to 20 universities in 2011 [10].

Higher education in Malaysia has played an essential role in economic development in which they provide human resource development, high skills training and the application and acquisition of new knowledge [11]. In addition, the government has made every endeavour to ensure that education has become an export industry [12]. Due to its strategic position, the Malaysian government has prioritised the education and training sector. The government allocation for this sector is 20.6 % from the overall expenses of the 10<sup>th</sup> Malaysia Plan [13].

**Quality Initiative in Malaysian Higher Education Institutions:** Since 1996, MPHEIs have changed progressively after the government executed a corporatisation policy. This is in line with the modification of the Education Act in 1996 [14]. Subsequently, since March 1998, the MPHEIs began to be corporatised with the objective of providing more autonomy for the management of universities and flexible lecturer recruitment and payment. This policy enabled the MPHEIs to generate income from other government sources [12]. The policy has affected the universities in that they put more emphasis on the effectiveness and efficiency of their management [14].

In 1996, the Ministry of Education launched a customer charter, formalising the inception of TQM in the Malaysian education system. The ministry formed a policy and quality section to monitor the implementation of the country's education policy at all levels, based on TQM principles, with a vision that schools and universities would eventually adopt TQM principles. In addition, to control the standards of MPHEIs, the National Higher Education Council (NHEC) was formed in 1996. A grading system was put in place to assess the effectiveness of each department and faculty. In 1997, the Ministry launched the national accreditation committee to assess the quality of HEIs [15].

The Chief Secretary to the Malaysian Government, Lord Osman, said that the customer satisfaction on the best services offered becomes a yardstick for an organisation. In line with this, ISO 9001 certification could measure the quality of services provided, especially through research and development. In this regard, he said *"The function of MPHEIs has an impact upon the nation as they produce skilled and competitive human resources. Hence, the MPHEIs must be prepared for the challenges in their effort to overcome various issues related to education and the student"* [16].

Since the early 1990s, the Malaysian Higher Education Institutions (MHEIs) began implementing quality management system ISO 9000 as a management initiative. ISO 9000 implementation within MHEIs focuses on the management side of academic programmes or academic activities. Although the ISO 9000 focus is highly appreciated, there is also a need to have a system that is able to improve the academic syllabus and to improve the academic programmes. Universities as academic institutions must give more emphasis to their core activities, i.e., to offer the best quality academic programme and its deliverance. Therefore, by the end of the 1990s, Malaysian universities management had taken their first step to implement Malaysia Quality Assurance (MQA) in their respective universities.

A smooth quality assurance system for higher education helps to inspire and create enthusiasm among the learners in their thoughts, deeds and daily life to establish moral, humanitarian, religious, cultural and social values in personal as well as in national life. The aim of an effective quality assurance system for higher education is to make best use of such skills to attain professional excellence without wasting time, labour, talent or resources [17].

**The ISO 9001 Requirements:** The Quality Management System (QMS) should be adopted strategically, in which consideration must be given to varying needs, particular objectives, the products provided, the process employed and the size and structure of the organisation [18]. The QMS describes the interaction of all processes in the organisation in which the main activity is to identify customer requirements and ends with their satisfaction. Specifically, ISO 9001 describes QMS as the integration of these major areas: management responsibility, resource management, product realisation and, measurement, analysis and improvement [19]. In this respect, Tsim *et al.*

[20] state that the requirements of ISO 9000:2000 are to maintain a greater focus on processes, customer satisfaction, user needs and continuous improvement of organisational process. Hoyle [21] defines the requirements in ISO 9000 as a need or expectation that is stated, generally implied or obligatory. The five requirements of ISO 9001 are as follows:

**The Quality Management System:** The organisation should establish, document, implement and maintain a QMS and continually improve its effectiveness in accordance with the requirements of this standard [18]. Seaver [22] contends that there are two requirements in the QMS: general and documentation requirements. With regard to general requirements, ISO 9001:2000 contains the concept of Deming's cycle of CI - Plan, Do, Check, Act (PDCA) [19]. Bhuiyan & Alam [23] explain that the PDCA cycle consists of the following steps: define, develop and document each process; implement documented procedure; monitor implemented procedure; and improve the procedure.

**Management Responsibility:** Top management should show its commitment to the QMS development and implementation and continually improve its effectiveness [18]. According to Biazzo & Bernardi [24], the 'management responsibility' element comprises the requirements for developing and improving the quality system, listening to customers, formulating quality policy and planning and defining responsibilities, authorities and communication processes to facilitate effective quality management.

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**Resources Management:** The organisation should provide the resources required to implement and maintain the QMS and continually improve its

effectiveness. This is also needed to enhance customer satisfaction by meeting customer requirements [18]. In line with this, QMS Requirements [25] consider a process as an activity using resources and manage it in order to enable the transformation of inputs into outputs. It can be said that organisational resources is one of the main components in QMS process-based management, therefore, it should be managed effectively. Biazzo & Bernardi [24] state that 'resource management' comprises the requirements of both human and infrastructural management resources. In a nutshell, Seaver [22] contends that there are three elements of resources, as follows:

**Product Realisation:** The process needed for product realisation should be planned and developed by the organisation [18]. According to Seaver [22], the term product realisation refers to the day-to-day productive business, whether they produce a tangible product or provide a service or combination of both. To be specific, Biazzo & Bernardi [24] state that the 'product realisation' elements include identifying customer requirements, reviewing product requirements, communicating with customers, designing and developing products, purchasing, producing (and/or delivering) services and controlling measurement and monitoring devices.

**Measurement, Analysis and Improvement:** According to ISO [18] and Biazzo & Bernardi [24], this part contains the requirements for monitoring information on customer satisfaction, measuring and monitoring products and processes and managing internal audits, non-conformity detection and improvement actions. Seaver [22] stresses statistical techniques in extracting key information and then evaluating the effectiveness of the QMS.

**Culture:** According to Hofstede [26], the meaning of culture is derived from Latin sources in which it refers to tilling of the soil. He also refers to culture as a '*civilization*' or '*refinement of the mind*'. Maull *et al.* [27] contend that the term "culture" is derived from social anthropology to describe the quality of human groups that are passed from one generation to the next.

According to Hofstede [26], culture is learnt and it derives from the social environment. He argues that it should be distinguished from two different sides: human nature and an individual's personality. He further expounds that human nature is all about human beings and it represents the universal level in one's mental software. According to the author, the human ability to

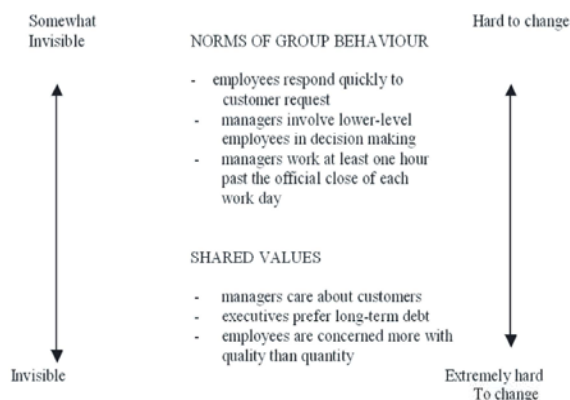
feel fear, anger, love, joy, sadness and so on all belongs to the level of mental programming. However, the author argues that although what one does with these feelings is modified by culture, the personality of an individual is his unique personal set of mental programmes, which he does not share with any other human being.

There are many definitions of culture presented by authors. For instance, Hofstede [26] defines "...culture as the collective programming of the mind which distinguishes the members of one group or category of people from another". Meanwhile, Kotter [28] refers to culture as "...norms of behaviour and shared values among a group of people". Schein in Rashid *et al.* [29] explains that culture is "...the sum total of all the shared, taken for granted assumptions that a group has learned throughout history".

Culture has also been further described by certain authors, for instance, Brown [30] describes culture randomly, in which he refers to artefacts, language, behaviour patterns, norms of behaviour, heroes, symbols and symbolic action, beliefs, values and attitudes, ethical codes, basic assumptions and history. Hofstede [26] describes culture using four items: symbols, heroes, rituals and values. Specifically, he ranked these items regarding different levels of depth. The symbols represent the most superficial values as the deepest manifestation of culture. Meanwhile, heroes and rituals are in-between.

According to Kotter [28], corporate (organisational culture) has two components: norms of group behaviour and shared values. The norm of group behaviour is somewhat invisible and hard to change. Meanwhile, shared values at the lower level are invisible and, therefore, extremely hard to change (Figure 1).

**Organisational Culture:** Schein [31] relates culture to the group as he defines culture as "...a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems". According to Brown [30] organisational culture means "...the pattern of beliefs, values and learned ways of coping with experience that have developed during the course of an organization's history and which tend to be manifested in its material arrangements and in the behaviours of its members".



Source: Kotter (1996, p.149)

Fig. 1: Components of Corporate Culture

**Types of Organisational Culture:** Handy in Brown [30] presents the types of organisational culture as follows:

- The power culture: The culture has a single source of power in which through rays, the power spreads through the organisation. This culture is highly based on trust, empathy and personal communication in which there are only a few rules and little need for bureaucratic process. Control can be exercised through the selection of key personnel and edicts.
- The role culture: This is a bureaucratic culture, which emphasises logic and rationality. The culture also depends on its functions and specialties. It also consists of rules, procedures and job descriptions and promotion is based on an individual's performance.
- The task culture: The source of power of this culture is expertise instead of position or charisma and it develops within the specific job or projects. The focus is to accomplish the job in which the organisation should bring the right people and sufficient resources.
- The person culture: A person that embraces this culture views that it is in their own interests to organise on a collective rather than an individual basis. For example, the barristers band together to share the costs of their office.

**Research Methodology:** The case study was conducted at one of the Malaysian Higher Education Institutions, Case 'A'. Case 'A' was a Polytechnic Staff Training Centre and was upgraded to being a university in 2000. It is situated in a small town, in the southern part of the Malaysian peninsular [32]. The University has been certified with ISO 9001 since 2002.

This University has six Faculties and for the purpose of the study, only one faculty, i.e., the Faculty of 'A' was selected. This was to enable the author to do an in-depth study. Case 'A' was selected because:

- Case 'A' has been certified with ISO 9001 since 2002. These criteria offer advantages for the author in getting rich information regarding ISO 9001 implementation activities.
- Case 'A' has implemented ISO 9001 holistically. The implementation of ISO 9001 has not just involved faculties and academic centres, but also encompassed support activities such as human resources, student affairs, libraries, finances, property and infrastructure and the student residential college.
- Permission to conduct fieldwork was granted by the Rector of Case 'A'.

The semi-structured interview type has been chosen as the main method as its flexibility allows the author to modify the questions to understand the phenomenon investigated. Robson [33] claimed that the order of questions can be modified based upon the interviewer's perception of what seems the most appropriate. This enables the author to ask additional questions and further explanations in regard to certain points to gain in-depth understanding. Ten interviewees, who were actively involved in the implementation of ISO 9000 from Case 'A' were interviewed. The interviewees were selected from different categories, i.e., university's quality management committee, faculty's quality management committee, dean, assistant registrar, head of department and lecturers. Data from the interviews were triangulated with the data collected from documents and observations.

### **Research Findings**

**Fulfilling ISO 9000 Requirements of ISO 9000:** It was indicated that Case 'A' had tried to comply with the ISO 9001 requirements in order to maintain ISO 9001 certification. Five ISO 9000 requirements had been complied with, i.e., quality management system ISO 9001 effectiveness enhancement, management responsibility, resource management, product realisation and continuous improvement. The findings on their efforts are highlighted as follows:

**Quality Management System ISO 9001 Effectiveness Enhancement:** The University Head Division of Corporate and Quality Management (UHDCQM) and University

Head of ISO 9000 Central Unit (UHIUCU) indicated that to enhance the effectiveness of QMS, training in respect of Teaching and Learning had been provided to the lecturers. Emphasis on internal audit was another step taken by the university management. This was confirmed by the *internal* audit report. They added that the university management also discussed ISO 9001 affairs in the Senate and Faculty meetings, improving diploma and degree programmes and developing the research environment. In respect of this, management review meeting minutes revealed that the Dean of Case 'A' had presented the QMS affairs in the management review meeting to review its performance. Meanwhile, two of the Quality Managers agreed that accreditation from an engineering professional body had been acquired. They added that the work procedures were upgraded and courses concerning ISO 9001 were provided. In addition, the lecturers had put in serious efforts to complete their course file. Another Quality Manager stressed that there was no plan to change or upgrade the achieved quality objectives as more time was needed to see the trend against quality objective achievements, which could take three years.

The Dean and the Assistant Registrar said that serious efforts had been put into continuously improving the effectiveness of QMS ISO 9001, such as an emphasis on training internal auditors and enhancement of student facilities. In addition, many lecturers had been sent overseas to further their studies for which a huge amount of money had been allocated to sponsor them. Many lecturers were on study leave and, as a result, the lecturers remaining had to work very hard to deliver teaching and learning activities. Meanwhile, the Head of Department believed that the Faculty had increased the QMS effectiveness and the staff had shown a good commitment to QMS ISO 9001. However, he commented that nobody could guarantee that the ISO 9001 requirements had been totally complied with; for example, the staff could not supply documentary evidence for certain work processes. In this way, he suggested that everybody should cautiously deliver their job and that lecturers should complete their course files.

Meanwhile, one of the lecturers believed that one of the quality objectives, i.e., "*30% of the Faculty's lecturers to acquire PhD qualification*" was not achieved, the Faculty's management had made a serious effort to send 40% of their lecturers to study for a PhD. The Faculty had operated with only 60% of its lecturers and this had negatively affected the ideal lecturer to student ratio and, eventually, had resulted in a negative

effect on the teaching and learning quality. For instance, he himself had to handle a subject with a huge number of students and also had to supervise a large number of final year projects. In this way, he believed that two of the quality objectives were competing with each other. According to another lecturer, another step taken was the provision of the desk file to all staff as a guideline in delivering their job. Lately, he added, the Faculty management had started to instigate a research culture amongst lecturers and students.

### **Management Responsibility**

**Evidence of Responsibility:** According to the UHDCQM, the University's top management had definitely shown evidence of their responsibilities throughout ISO 9001 maintenance; for example, the University's Rector had participated in monthly road shows to explain the University's affairs, which includes ISO 9001 maintenance. She further said, *"Our Rector had shown enthusiasm for ISO 9001 maintenance. He always insists that as our university is still new, we do not have a hero. Therefore, the staff should work in teams to accomplish any programme"*. In connection with this, the management review meeting minutes indicated that the University's Deputy Rector as management representative urged that all the Deans and the Heads of Centres should demonstrate serious commitment to ISO 9001 maintenance. Meanwhile, the UHIUCU said that the UHDCQM had conducted training for internal auditors as required by the Faculties.

All of the Quality Managers agreed that to communicate ISO 9001 affairs, the Faculty management had highlighted ISO 9001 issues at the Faculty and Department meetings. They added that the issues of customer satisfaction had not been neglected. In addition, motivation, budget, an office and information for ISO 9001 maintenance had also been provided. Meanwhile, one of the Quality Managers indicated that her role was as a mediator between the UHDCQM and Case 'A' in regard to the ISO 9001 matters. She argued that although the Faculty management was very supportive of ISO 9001 maintenance, she had to have her own initiative in delivering her job. In this context, she said, *"Absolutely the management had been very supportive of ISO 9001 maintenance, but as a quality manager I should have my own initiative to perform my job. This is because the management has many things to do and they could not just give attention to ISO 9001 matters"*.

Meanwhile, the Dean said that support and budget had been provided for ISO 9001 maintenance activities. He added that at the University level, the Division of Corporate and Quality Management (DCQM) had been set up wherein its Head had been given a Dean's status even though the DCQM was not a Faculty. According to the Assistant Registrar, as the majority of the academic and non-academic staff in Case 'A' were still junior, they were more cooperative with ISO 9001; this had helped the Faculty management in maintaining ISO 9001 more easily. Meanwhile, the Head of Department said that the Faculty management had made an effort to develop a research culture at Case 'A'. He said *"Currently, we have a new post at this Faculty, i.e., Deputy Dean for Research. The majority of our lecturers are juniors; they do not have a research background. Even though we have a big research fund, lecturers do not have the enthusiasm to make an application to the fund, so there is a lack of research activities. So, we are now actively conducting research workshops. We need a jump-start to develop research culture. We believe that through research activities, lecturers could develop their expertise"*.

As did the Quality Managers and the Faculty management, the lecturers also indicated that the management had shown evidence of their responsibilities throughout ISO 9001 maintenance. One of them said that the management had definitely shown evidence of their responsibilities because many resources had been invested for ISO 9001 maintenance. He revealed that there were many other programmes which had been implemented at the University and Faculty level which had strengthened ISO 9001 maintenance, such as the Japanese 5-s principles (seiri, seiton, seiso, seiketsu and shitsukei), Balanced Score-card and a channel for customer complaints. These were confirmed by the minutes of the DCQM meeting. Another lecturer said that the Faculty management was very serious about ISO 9001 maintenance; staff had always been reminded to make good preparation for internal and surveillance audits. In addition, the Quality Management Committee for the Faculty had also been set up. Meanwhile, during the fieldwork, the author observed that the quality objectives had been displayed in reception of the Faculty to catch people's attention.

**Training:** The findings indicated that three of the Quality Managers revealed that they had received training several times as internal auditors and lead auditors. Other training

that had been received was in regard to ISO 9001 for higher education. One of them said that because she was competent as a lead auditor, she was appointed as facilitator for the internal auditors in Case 'A'. The UHDCQM admitted that after the University had been certified with ISO 9001, she had not attended any training. However, she argued that she had learned through experience and she was confident that she had a better understanding of ISO 9001 matters compared to the lead auditor. In this context, she said *"I have been involved with ISO 9001 from the beginning, so I have a solid understanding of ISO 9001 maintenance"*. Meanwhile, another Quality Manager revealed that he had only attended training once, i.e., regarding an understanding towards ISO 9001.

The Dean said that he had received considerable training in respect of ISO 9001 maintenance, however, he could not offer any details about the training. The Assistant Registrar had received training concerning understanding ISO 9001. Interestingly, the Head of Department said that he received training 4 years ago on quality management and ISO 9001. He was confident that even though he had not received any training for a long time, he had a good knowledge of ISO 9001 maintenance, as he had been involved with ISO 9001 from the early stage. Meanwhile, one of the lecturers said that he had attended training several times. He added that as he had been involved with ISO 9001 adoption from the beginning, he had a good understanding concerning ISO 9001 matters. Another lecturer indicated that he was one of the committee who had initiated ISO 9001 implementation and he had only received training at that time. Meanwhile, DCQM meeting minutes revealed that the staff of the University, who were involved in ISO 9001 adoption, would be trained to ensure that they were competent to deliver their job.

**Resource Management:** The findings evidenced that the UHDCQM and UHIUCU claimed that many resources had been allocated for ISO 9001 maintenance, such as a high number of internal auditors, a conducive environment for working and a new teaching and learning infrastructure. However, they agreed that the University had experienced a lack of lecturers as many of them were on study leave. The management had tried to solve this problem by continuously conducting recruitment for new lecturers. Meanwhile, all of the Quality Managers also agreed that the resources provided for ISO 9001 maintenance in Case

'A' were not sufficient. They said that the budget for ISO 9001 maintenance was taken from the Faculty's management budget. Laptops had been provided for every lecturer and fully equipped laboratories had been provided for teaching activities. However, the interviewees commented that the number of laboratory technicians between departments was not balanced. For those departments that had fewer technicians, some lecturers had to monitor laboratories. In addition, lecturers also had to share their offices. All of the Quality Managers agreed that Case 'A' had experienced a lack of lecturers and, thus, the lecturer to student ratio could not meet the requirements of the engineering accreditation body. Meanwhile, one of the Quality Managers revealed that the recruitment process at Case 'A' was slow.

The Dean argued that whether the resources provided for ISO 9001 maintenance were enough or not enough was a relative subject. He said that many facilities had been provided, such as good laboratories and lecture theatres. He agreed that Case 'A' had experienced a lack of lecturers; the reason was that people were not keen to come to University A. He said *"Currently, we have 60 posts to be filled, but people are not interested in our university. We have put in serious effort to attract potential lecturers. Although we offer good remuneration, people like to go to established and urban universities"*. Meanwhile, the Assistant Registrar said that currently many lecturers went abroad to further their studies. She believed that this was a good investment because when the lecturers had higher qualifications, they could contribute better to the Faculty's performance. Meanwhile, the Head of Department indicated that a large fund was provided for research but it had been hard to utilise it, as lecturers did not have a research culture.

Meanwhile, the lecturers agreed that QMS ISO 9001 could be maintained with available resources; as a new university, University 'A' did not face any problems with budget management. This was because even though the University had developed from 1993 as a polytechnic, it was seen as a new entity now and it had received a huge amount of government funding. The interviewees added that Case 'A,' had a good infrastructure such as a new student residential college. The Faculty also had new technological complexes that were well-equipped with many teaching facilities, such as LCD projectors, ICT facilities and tutorial rooms.



In addition, laptops and personal computers were provided to academic staff and the University's Centre of Teaching and Learning had actively organised training for lecturers. Lecturers need to accomplish 40 hours training every year and this was confirmed by the *Centre of Teaching and Learning Bulletin*. However, the lecturers also said that Case 'A' had experienced a lack of space and room for students and lecturers. During the fieldwork, the author conducted interviews with the lecturers in their offices. From her observation, the author noticed that lecturers had to share their offices and that clearly this situation was not acceptable to them. As did the Quality Managers and the Dean, they also commented that the number of lecturers was not sufficient and, therefore, it should be enhanced.

### Product Realisation

**Management of Product Realisation:** The UHDCQM and UHIUCU outlined that Problem Based Learning (PBL) was adopted as a teaching technique. They added that Outcome Based Education (OBE) had also been implemented. They further added that the curriculum had always been revised and that input from industries and examiners had been obtained to improve academic programmes. In addition, the Department of Technology was set up in every Faculty to give more emphasis on practical knowledge for the student. For Case 'A', the advanced course, i.e., the packaging course was set up. The interviewees also said that the work procedures for research were not yet available and they were working to develop them.

Two of the Quality Managers said that it had been explained to them by Faculty management that the student was the faculty's main customer and, thus, everybody was focusing on how to manage the student properly from their admittance. For instance, an academic advisor system had been set up to give academic consultation for students. They added that lecturers had been trained to adopt new teaching methods such as PBL, which was inevitable for engineering students; the method had produced a very independent type of student and, recently, Case 'A' had conducted a car project design in which all the departments had taken part. One of the interviewees said that although there were many junior lecturers at Case 'A', the lecturers could not be too lenient to the student. She said, *"We could not pamper our students and we could not be too lenient with them. For instance, if they did not acquire pass marks for any exam or test, we had to fail them. In this Faculty, there are many junior lecturers and some students had a tendency to take them for granted. They are demanding"*.

Another Quality Manager revealed that the work procedures for academic programmes and other support activities had been provided, such as the work procedures for the student residential college, student affairs and laboratories. He added that academic programmes at Case 'A' were accredited by the engineering professional bodies every five years. In addition, in order to review student performance, emphasis had been given to final year student projects and student industrial training.

The Faculty management highlighted that various actions had been taken to manage academic programmes realisation. The Dean said that many actions had been taken to ensure that students could utilise teaching and learning programmes; for instance, Case 'A' had proper teaching facilities, library, trained lecturers and technicians. He added that while a support system of academic advisors and counsellors had been provided for students, the Faculty had also delivered a programme to polish excellent students. In addition, the Faculty also had suppliers, external examiners, adjunct professors and an industrial advisory committee. This was supported by *Case A academic pro-forma*. He felt that research and consultancy were also products of the Faculty although it was not stated in the Quality Manual. The Assistant Registrar agreed with the Dean as he stated that external examiners had been employed in order to continuously improve academic programmes. She added that a communication channel was offered to students to enable them to have their say concerning academic programme improvement. Meanwhile, the Head of Department revealed that a new course was developed to accommodate industries' requirements. For instance, a double degree had been set up to enable students to acquire other knowledge beside mechanical engineering, such as ICT and business administration. He added that 30 extra credit hours had been added to degree programmes, which emphasised 'hands on' skills and this had distinguished University 'A' from other universities.

One of the lecturers seemed to be in agreement with the Quality Managers as he said that lecturers should know and put commitment into their main responsibilities, i.e., to teach and monitor their students; in this way, lecturers had to go to teaching training. Supporting this, the Centre of Teaching and Learning Bulletin indicated that 60% of lecturers at Case 'A' had undergone training conducted by the University Teaching and Learning Centre. The interviewee added that particularly weak students must be motivated. In this context, he further said, *"It is true that there are some lecturers occupied with their research and consultation activities, especially senior lecturers. It cannot be denied that these*

activities are important for career development; however, they cannot give less attention to teaching tasks and their students. Lecturers are allowed to conduct research and consultancies but at the same time they have to deliver social responsibilities to their students. This is because I believe that teaching is still our main core activity". Another lecturer indicated that Case 'A' put emphasis on PBL as a teaching method and he admitted that he had practiced it. For example, he had taken his students to the advanced machining lab and formed them into several groups wherein they had been asked to discuss and solve the problem given. After that, they had to submit a report on how they had solved that problem. The interviewee further added that PBL was fully implemented for final year students, with the aim of developing an independent student. In addition, OBE had also been implemented in Case 'A'.

**Continuous Improvement:** Below are activities that have been taken at Case 'A' in performing continuous improvement initiatives:

- Providing an online channel for customer complaints. However, *Case A report for management review meeting* revealed that the complaint handling system at University 'A' was not carried out effectively. The document also revealed that in Case 'A', only one customer complaint had been received and it was not resolved.
- Organising open days with customers.
- Providing good facilities and instruments for teaching and learning purposes, such as lap tops for every lecturer, proper laboratories, LCD projectors, a time table, e-learning, exam schedules and titles for student's assignments.
- Providing good support facilities for students, i.e., buses, a clinic and student residential college.
- Conducting a motivation programme for weak students. Nevertheless, good students were encouraged to strive for excellence.
- Improving syllabuses and academic programmes.
- Practicing flexibility in regard to the usage of the English language as a teaching medium.
- Exercising PBL as a teaching method.

**Organisational Culture That Influenced ISO 9000 Maintenance Activities in Case 'A':** In this section, the elements of organisational culture that influenced ISO 9001 maintenance activities in Case 'A' are summarised as follows:

**Obedience Amongst Junior Lecturers:** Some administrative people, like the Head of Department, disliked ISO 9001 maintenance activities and they had delegated the ISO 9001 tasks to junior lecturers. Apparently, junior lecturers were obediently delivering the ISO 9001 tasks that had been delegated to them. Junior lecturers had also been more receptive to ISO 9001 maintenance activities and this had significantly helped the Faculty management in maintaining ISO 9001.

**Inspiring Leadership:** The University's top management had put in extensive efforts to develop a working culture that could support ISO 9001 maintenance activities. For instance, the University Rector himself had succeeded in acting as a role model in persuading university staff to support ISO 9001.

**Paternalistic:** As University 'A' was a new public university, staff at Case 'A' had realised that they had to accept ISO 9001 because it was a management instruction. QMS ISO 9001 was used as a management system to ensure that staff would deliver their job in accordance with the work procedures.

**Blame Culture:** Many lecturers whether they were junior or senior lecturers were uncomfortable if they received non-conformance cases. They felt embarrassed because a blame culture was still apparent at Case 'A'.

**Strong Willingness:** Lecturers that had been actively involved in ISO 9001 maintenance activities, such as being a member of the Quality Management Committee, were able to manage their tasks effectively. This was because they were only busy with ISO 9001 affairs at certain times, i.e., during audit and during the work procedures improvement processes.

**Accommodate Demands from a Few Senior Lecturers:** A few senior lecturers that were individualistic and had ignored ISO 9001 maintenance activities had not been placed in any strategic position, which could endanger ISO 9001 affairs. They had been asked to concentrate on research activities and they had to produce good research performance.

**Lack of Involvement of Senior Lecturers:** Although input from senior lecturers was needed for ISO 9001 maintenance activities, some senior lecturers were not interested in taking part in ISO 9001 maintenance activities. As a result, the ISO 9001 maintenance activities had suffered a lack of significant input from senior lecturers.

**Lack of Understanding of ISO 9001 Clause 8:** Many staff did not really understand the ISO 9001 clause 8, which stressed measurement and improvement. Eventually, they had seen ISO 9001 as a stagnant system and refused to become totally involved.

**Ambiguity in Customer Definition:** Some lecturers did not agree with the customer definition; i.e., they believed that as a public higher education institution it was not right to view students as the Faculty's customers. Case 'A' was not running a business and it should not have any customers. However, some lecturers viewed students as the Faculty's customers and because of that, they had to work hard to satisfy their demands.

**Impatience:** Many lecturers were impatient to see the benefits and outcomes from ISO 9001 maintenance activities. They believed that although huge resources had been employed for ISO 9001 maintenance activities, the real benefits of ISO 9001 maintenance activities had come slowly.

**Complicated System:** Some academics felt that they were distant from ISO 9001 as it was a complicated system. It contained a lot of jargon and technical words that made it difficult to understand.

## DISCUSSION

Five ISO 9000 requirements were investigated in this study; quality management system, management commitment, resource management, product realization and continuous improvement. The findings evidenced that many steps had been taken to improve quality management system ISO 9000 at Case 'A' such as conducting training series for lecturers, delivering quality audit, discussing ISO 9000 matters in meeting, improving academic programme, acquiring accreditation from engineering professional bodies and completing course files. Management at Case 'A' had also sent many lecturers to local and overseas universities to further their studies. This had triggered problems, i.e., Case 'A' lacked lecturers and the remaining lecturers struggled to deliver teaching tasks.

The findings also indicated that management at case 'A' had shown responsibility in fulfilling ISO 9000 requirements. For instance, the University's Rector had participated in monthly road shows to explain ISO 9000 initiatives. Many resources had been invested for ISO 9000 activities. Motivation, budget, an office and

information for ISO 9000 activities had also been provided. Basically, training pertaining to ISO 9000 was apparently emphasized at Case 'A'. There were cases that interviewees only attended minimum training. However, they were proficient with ISO 9000 as they had been involved in the ISO 9000 initiatives from the beginning. They had developed their ISO 9000 expertise through experience.

In respect of resource management matters, the findings indicated that there were many internal auditors at Case 'A'. Case 'A' had also been provided with new teaching and learning infrastructure. Laptops had been provided for every lecturer and fully equipped laboratories had been supplied for teaching activities. However, there were impediments for ISO 9000 initiatives at Case 'A'. For instance, Case 'A' had experienced a lack of lecturers, as many of them were on study leave. Besides that, lecturers had to share their offices. The offices provided at Case 'A' were not sufficient to place lecturers. Case 'A' had also experienced a lack of space for students.

Meanwhile, to ensure product realization, many activities had been conducted at Case 'A'. For instance, Problem Based Learning (PBL) and Outcome Based Learning (OBL) had been implemented. The Department of Technology was set up to give more emphasis to practical knowledge for the students. In addition, an academic advisor system had been set up to give academic consultation for students. Students with poor exam results had also been consulted by a counsellor. Case 'A' had also delivered a motivation programme to promote excellent students. Finally, many continuous improvement projects had been conducted at Case 'A'. All of the projects conducted were designed to improve teaching and learning activities at Case 'A'. The findings had raised concern that customer complaint management was not effectively delivered at Case 'A'.

In respect of the investigation concerning organizational culture matters, the findings indicated that there were many elements of an organizational culture involved in fulfilling ISO 9000 requirements, which can be divided into two categories, i.e., supportive and destructive culture towards ISO 9000. The supportive culture includes obedience among junior lecturers, inspiring leadership, paternalistic, strong willingness and accommodate demands from a few senior lecturers. Meanwhile, the destructive culture includes blame culture, lack of involvement of senior lecturers, lack of understanding of the ISO 9000 clause 8 (continuous improvement), ambiguity in customer definition, impatience and complicated system.

## CONCLUSION

As a conclusion, there were many programmes and activities that had been conducted at Case 'A' in order to fulfil ISO 9000 requirements. Management commitment can be discerned from the resources that were poured into ISO 9000 maintenance. Sufficient teaching and learning facilities were provided to sustain the student learning process. However, there were a few challenges in fulfilling ISO 9000 requirements, i.e., lack of lecturers, lack of office for lecturers and lack of space for students. It is also apparent that customer complaint management was not effectively delivered at Case 'A'. There were elements of culture that support or destruct ISO 9000 maintenance at Case 'A'. The presence of a destructive culture however did not weaken the ISO 9000 maintenance process.

ISO 9000 implementation within Malaysian HEIs is a remarkable effort and should be appreciated. Although there was some criticism, it cannot be denied that ISO 9000 implementation has offered many benefits to Malaysian HEIs. Almost all of Malaysian Public HEIs acquired ISO 9000 certification. Malaysia has organized many discussions and forums pertaining to HEIs governance in Muslim countries. In addition, Malaysia has shown commitment to work together with Muslim countries in improving the quality of HEIs.

The findings from this paper can be employed by managers in HEIs in Muslim countries as a guideline in their endeavour to implement effective quality programmes. This is crucial as Muslim countries are currently putting tremendous effort into improving the quality of their respective HEIs. Quality improvement is paramount to locate HEIs in Muslim countries on the global map on a par with HEIs in western countries.

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