

Effectiveness of ISO Implementation in Teaching and Learning at UKM: An Insight into Students' Perception

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Abstract: The Universiti Kebangsaan Malaysia (UKM) attained its ISO 9001 certification for the management of undergraduates' examination in 2003. Since 2006, the registration scope has been extended to include six other core processes related to teaching and learning namely: programme development, promotion and students enrolment, students registration, teaching, management of examination and conferment of awards. As part of university's initiatives on continual quality improvement for teaching and learning processes, an evaluation on the effectiveness of the ISO implementation has been carried out for different level of staffs as well as internal customers that include students. This study reports the findings from a recent study aimed at identifying the effectiveness of the ISO implementation from the undergraduates perspective focusing on the quality policy, quality objectives and work instructions. The study involved 300 respondents from 14 faculties. Data is obtained using a survey questionnaire and analysed using the SPSS. For the purpose of this study, the descriptive statistical approach is deployed which includes analysis on frequency, percentage, mean, cross tabulations and correlation coefficient. Results from the study indicated that the undergraduates are satisfied with the quality management implementation related to the quality policy, quality objectives and work instructions that supports the management of academic programmes. Based on the study, improvements to the management of the academic programme will be proposed in-line with the requirements of the ISO already in place.

Key words: ISO 9001, quality management system, continual quality improvement, teaching and learning, stakeholders, academic programme

INTRODUCTION

The Universiti Kebangsaan Malaysia (UKM) attained its ISO 9001 certification for the management of undergraduates' examination in 2003. Since 2006, the registration scope has been extended to include six other core processes related to teaching and learning namely: program development, promotion and students' enrolment, students' registration, teaching, management of examination and conferment of awards. As part of university's initiatives on continual quality improvement for teaching and learning processes, an evaluation on the effectiveness of the ISO implementation has been carried out for different level of staffs as well as internal customers that include students. This study reports the findings from a recent study aimed at identifying the effectiveness of the ISO implementation from the undergraduates' perspective focusing on the quality policy, quality objectives and work instructions.

Literature review: Researches related to quality management system in institutions of higher learning are not new, however availability of resources from previous studies are rather limited. The literature review presented in this study may vary but to a certain extend the theme is similar to the quality management system practiced in any organization. Generally, there are two themes in the literature review. The two themes are firstly, discussion on the importance and benefit or good practices of the ISO 9000 series and secondly, weaknesses or limitations in the ISO 9000 series implementation.

Curkovic and Pagell (1999) addressed the importance of ISO 9000 certification as a business benchmark. The benefits of ISO 9000 implementation are significant as it can be the key towards a successful organization in addition to improving efficiency. Despite all the positive impacts of ISO implementation, it is also claimed to be time consuming and costly. The study concluded that the benefits of implementing ISO 9000 outweigh the

limitations since ISO 9000 is fundamental to continual improvement and problem solving. It is also acknowledged that the success of ISO 9001 implementation requires training at all levels of staffs.

Kadir argued that ISO quality management system assists an organization in the planning, management, production and development of human capital on quality apart from providing goods and services that meet customer requirements. Analysis on the ISO 9001 implementation in Malaysia is conducted through comparative studies at the global level that includes countries from the Far East and ASEAN as well as the public and private sectors in Malaysia. The study reaffirms that implementation cost is still an issue and that ISO 9001 adversely affects other core activities such as increment in the workload of staffs.

Mola (2007) studied the implementation of ISO 9001 in some libraries of institutions of higher learning. The study has found that ISO implementation is capable of promoting a dynamic continual improvement with clear responsibilities, standardization of work procedures and renewal of the documentation process. In short, ISO 9001 enhances the efficiency of the libraries. Rospian observed that the ISO quality management system is encouraging and provides positive expansion in multinational companies. Benefits may be reaped instantly or otherwise several years after its implementation.

Casadesus *et al.* (2001) observed the internal benefits from the aspects of human resource management such as increase in job satisfaction and communication between management and staffs. The external benefits will include increase in customer satisfaction, reduction in the number of complaints and increase in sales. Most companies that implement ISO 9001 obtained internal and external benefits leading to opportunities for restructuring and clear management responsibilities.

Nevertheless, ISO implementation has its setbacks. Papisolomou-Doukakis (2003) conducted a study on quality management through internal marketing in the banking sector in United Kingdom. In order to achieve the aim of becoming an effective and successful organization, this internal marketing method focuses on the understanding of internal customers, importance of training, compliance to the standard of internal marketing as well as strategy for rewards to services that meet targets. Overall, the case study indicates that these four methods are the basis to internal marketing and for the top management it is a pre-requisite for achieving customer satisfaction. Both aims will be attained, i.e., change in the attitude of staffs and success of the organization (Kelemen, 2003).

Khairul identified the relationship between quality management practices and the level of internal customer satisfaction to the performance of the service sector in local authorities. He proposed elements of an excellent quality management practices, customer focus, workforce focus, quality training, supplier relationship, information technology and communication as well as process management. The study found that there is a significant relationship between the elements of an excellent quality management and internal customer satisfaction and organizational performance.

Othman and Abdullah (2007) studied staffs perception on ISO implementation at private colleges that includes academic and non academic staffs. The study focuses on staffs' awareness on the quality programs, understanding on the benefits and setbacks of ISO, operations management and overall staffs' satisfaction. It was observed that academic staffs' satisfaction is lower than non-academic staffs on the aspects of implementation and perception on the quality of operations management. They also have no interest on the certification process and have the impression that certification will not improve the existing operations management. The respondents in the study argued that they are overloaded with too many responsibilities apart from teaching and learning which is the core activity. Non academic staffs on the other hand, felt that ISO certification enables them to be more efficient and responsive to the needs of their internal and external customers. They also felt that ISO certification has improved the quality of their service towards customers, reduced number of complaints and failure in delivering their services.

A review on related literature has shown that there are limited studies on the relationship between quality management system practices at the institutions of higher learning and their internal customers. Two recent studies can be noted, i.e., on the implementation of ISO in UKM and the reliability of the students' feedbacks system. Daud *et al.* (2011) studied the merger of the ISO QMS for undergraduate and graduate programmes at the Universiti Kebangsaan Malaysia (UKM). The study was conducted to assess staffs' awareness and acceptance of the QMS and to assess the effectiveness of the merger. Results of this preliminary study indicated that all categories of staffs, particularly the support staffs, concurred that the merger provides positive implications to time management and documentation. Besides, commands and procedures on ISO have become more effective. The second study was done by Jaafar *et al.* (2011) on the Course Teaching Evaluation System (CTES). The CTES System was

created to evaluate the quality of teaching in UKM and it provides important input towards continuous improvement of the programs offered by faculties at the university. The study focuses on the reliability of students' feedback on CTES and the effectiveness of the system in assessing students' responses on various aspects of teaching. The findings showed that reliability of the feedback system is very important in order to identify the effectiveness of teaching related to the course content, infrastructure, equipment, laboratory and lecturers' teaching competencies. In relation to these two earlier studies, the study reported in this study aims to assess the effectiveness of the ISO quality management system implementation based on the internal customer perception, particularly the undergraduate students at UKM. Results from this study will be used to further identify areas for improvement to the existing quality management system on Teaching and Learning (TnL).

Objectives of this study: This study is aimed at investigating UKM students' perception on ISO implementation in the TnL process. Specific objectives of the study are as follows:

- To ascertain students' perception on the university's attainment of its quality objectives
- To identify students' perception on the university's compliance to its work instructions
- To identify improvements that will enhance the efficiency of ISO QMS implementation
- To investigate the relationship between the attainment of quality objectives and compliance to work instructions

MATERIALS AND METHODS

This study is descriptive in nature using Likert scale questionnaires. According to Wiersma (1995), this is a suitable method for studies that aims to measure and assess attitude, perception and attainment of a certain program. The respondents of this study were 3rd year undergraduate students from different faculties in UKM. They were selected based on stratified random sampling method. The sample size determination schedule (Krejcie and Morgan, 1970) was used to determine the appropriate number of sample and it was set at 300. The research instrument was a set of questionnaire where items were written in a positive form and respondents were required to rate their perceptions according to the Likert scale ratings. The questionnaire was validated through discussions among the researchers. Alpha

Cronbach value of >0.60 was set for each item in the questionnaire to ensure its reliability. A pilot survey was conducted to ascertain the weaknesses and strength of the questionnaire. A total of 50 respondents participated in this pilot survey and they did not face any difficulties in understanding and answering the questions. For the actual study, a total of 300 questionnaires were distributed to students from all 14 faculties at the university. A total number of 287 questionnaires were returned. Data were then analysed using SPSS statistical package to determine the frequency, percentage and average score for the levels of awareness, acceptance, appreciation and effectiveness of the ISO implementation on TnL at UKM, according to the students' perception.

RESULTS AND DISCUSSION

Respondents' profile: The study involved undergraduate students from seven faculties in the UKM main campus at Bangi and Selangor. Altogether, 287 students participated in the survey in which the majority were female students (>75% = 219 students) and the remaining quarter were male (Fig. 1). Such proportion represents the actual distribution of male and female students in the main campus. The respondents were from seven different faculties in the main campus.

As shown in Fig. 1, about 40% (104) of the respondents were from the Faculty of Social Sciences and Humanities. This percentage is followed by around 15% respondents each from Faculty of Science and Technology (17.4%, 50 students), Faculty of Islamic Studies (14.6%, 37 students) and Faculty of Economy and

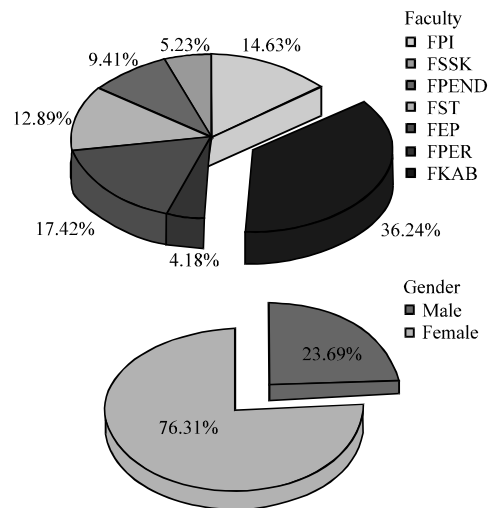


Fig. 1: Respondents' profile by faculty and gender

Business (12.9%, 27 students). Almost 10% of the respondents were studying in Faculty of Medicine and about 5% were Faculty of Engineering and Built Environment (5.2%) and Faculty of Education (4.2%) students.

In the survey, the respondents were asked whether they were aware of the implementation of QMS ISO 9001 in the TnL process. The response obtained according to faculty percentages are shown in Fig. 2.

With reference to Fig. 2, it was found that, out of 284 students who responded to the question, 236 (82.2%) agreed that they were aware of the ISO implementation in TnL while 48 (16.6%) students did not. Total 100% of the respondents from Faculty of Medicine and Faculty of Education agreed that they were aware of the activity. For all faculties, majority of the respondents (>75%) were aware of the QMS ISO implementation except for the Faculty of Engineering and Built Environment. For the latter, 60% (9 out of 15

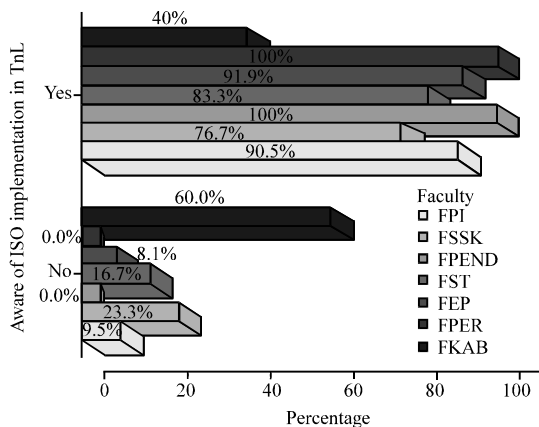


Fig. 2: Awareness on the implementation of ISO 9001 in the teaching and learning process

respondents) claimed that they were not aware of the QMS ISO implementation in the TnL processes.

Students perceptions towards university’s compliance to quality objectives: Twelve statements related to the university quality objectives were posed. Students were asked whether they agreed to the statements which implied that the quality objectives are met. Table 1 shows the frequencies and percentages for all the responses.

From Table 1, 8 out of 12 statements were agreed upon by >60% of the students. The percentages of agreement ranged from 51.4-90.6%. Statements related to quality objectives were agreed upon by >80% of the respondents (in descending order, highest Q6):

- Q6: I evaluated my lecturers’ teaching performances using Course Delivery Assessment System (SPPK) is 90.6%
- Q12: I always receive my exam results before the new semester begins is 87.5%
- Q9: I received the examination schedule at least a week before the exam starts is 85.8%
- Q4: Faculty registration follows the academic schedule is 80.2%

On the other hand, about 50-60% of the respondents disagreed with the statements of quality objectives as listed below (in ascending order, lowest Q1 and Q10):

- Q10: I have never seen any errors in my examination questions is 51.4%
- Q1: Media advertisement on the university’s academic program is clearly stated is 51.4%
- Q3: I received the registration information 3 weeks before registration date is 56.6%
- Q8: I am satisfied with the TnL facilities at the faculty is 59.4%

Table 1: Respondents agreement on the achievement of quality objectives

Statements	Agree		Disagree		No Response	
	Frequency	%	Frequency	%	Frequency	%
Media advertisement on the university’s academic program is clearly stated	148	51.4	139	48.3	1	0.3
I received the offer letter 2 weeks before commencement of the semester	182	63.2	105	36.5	1	0.3
I received the registration information 3 weeks before registration date	163	56.6	123	42.7	2	0.7
Faculty registration follows the academic schedule	231	80.2	57	19.8	-	-
Lecturers conducted their lectures according to the teaching plan	201	69.8	87	30.2	-	-
I evaluated my lecturers’ teaching performances using Course Delivery Assessment System (SPPK)	261	90.6	26	9.0	1	0.3
I am satisfied with my lecturers’ teaching	214	74.3	68	23.6	6	2.1
I am satisfied with the TnL facilities at the faculty	171	59.4	117	40.6	-	-
I received the examination schedule at least a week before the exam starts	247	85.8	41	14.2	-	-
I have never seen any errors in my examination questions	148	51.4	140	48.6	-	-
I have never been given the wrong grades	177	61.5	110	38.2	1	0.3
I always receive my exam results before the new semester begins	252	87.5	35	12.2	1	0.3

Table 2: Respondents agreement on work instructions conformance

Items	Agree		Disagree		No response	
	Frequency	%	Frequency	%	Frequency	%
I was informed about the procedure during my course registration	195	67.7	93	32.3	-	-
I am clear about the procedures for postponement and suspension of studies	158	54.9	130	45.1	-	-
Courses were offered according to the prospectus	245	85.1	42	14.6	1	0.3
Class time table was announced 1 week before beginning of the semester	177	61.5	110	38.2	1	0.3
I received information on the courses offered from the Students Information System (SMP)	242	84.0	45	15.6	1	0.3
I received circulars regarding the registration date a week before registration begins	179	62.2	108	37.5	1	0.3
The SMP can be easily accessed	202	70.1	86	29.9	-	-
I received notification on successful course registration	242	84.0	45	15.6	1	0.3
I was being informed about the dates for adding, dropping and suspension of courses 2 weeks before the semester commences	224	77.8	64	22.2	-	-
In case of late registration, I am being notified about the necessary procedures	154	53.5	134	46.5	-	-
I was informed about credit/unit exemptions procedures	147	51.0	141	49.0	-	-
My lecturers explained the scope and syllabus of each course during the first meeting	244	84.7	44	15.3	-	-
I was informed if there should be any postponement of lectures	185	64.2	103	35.8	-	-
My lecturers always consult the students for the time and date for replacement lectures	251	87.2	36	12.5	1	0.3
Replacement lectures were conducted accordingly	236	81.9	50	17.4	2	0.7
Components of course assessment were implemented as informed to the students during first meeting	227	78.8	61	21.2	-	-
I was informed about my marks for continuous course assessment	223	77.4	64	22.2	1	0.3
The information regarding examination was given at week 16	193	67.0	95	33.0	-	-
I received the examination schedule and the examination admission card at week 13	224	77.8	62	21.5	2	0.7
If barred from the examination, students will be informed a week before the examination starts	166	57.6	121	42.0	1	0.3
I am being notified if there should be postponement of the final examination	139	48.3	149	51.7	-	-
I am well-informed about the procedures for re-examination	132	45.8	156	54.2	-	-
I know about the procedures for appealing for re-assessment of examination grades	157	54.5	131	45.5	-	-

Students' perceptions towards university's compliance to work instructions: Respondents were asked on their agreement (agree or disagree) towards 23 sets of statements related to work instructions (Fig. 2). The percentage of agreement ranged from 45.8-87.2%. Results showed that 16 out of 23 statements were agreed upon by >60% of the students (Table 2).

About >80% of the respondents agreed that the work instruction were conformed in the following areas (in descending order, highest Q14):

- Q14: My lecturers always consult the students for the time and date for replacement lectures is 87.2%
- Q3: Courses were offered according to the prospectus is 85.1%
- Q12: My lecturers explained the scope and syllabus of each course during the first meeting is 84.7%
- Q5: I received information on the courses offered from the Students Information System (SMP) is 84.0%
- Q8: I received notification on successful course registration is 84.0%
- Q15: Replacement lectures were conducted accordingly is 81.9%

In addition to that about 50-60% of the respondents disagreed with some statements on the work instructions as listed below (in ascending order, lowest Q22):

- Q22: I am well-informed about the procedures for re-examination is 45.8%

- Q21: I am being notified if there should be postponement of the final examination is 48.3%
- Q11: I was informed about credit/unit exemptions procedures is 51.0%
- Q10: In case of late registration, I am being notified about the necessary procedures is 53.5%
- Q23: I know about the procedures for appealing for re-assessment of examination grades is 54.5%
- Q2: I am clear about the procedures for postponement and suspension of studies is 54.9%
- Q20: If barred from the examination, students will be informed a week before the examination starts is 57.6%

The findings indicated that in general, the respondents perceived most work instructions as required by the QMS ISO 9001 were achieved. It was also observed that areas needing improvement were mainly related to examination procedures.

Improvements to increase the efficiency of QMS:

Analysis of Independence using χ^2 -test were carried out to test whether the statements related to the quality objectives and statements related to the work instructions are dependent on whether or not the respondents are aware of the implementation of the QMS ISO 9001. Table 3 shows the findings from the analysis. The findings show that three statements (out of 12) of quality objectives and 17 statements (out of 23) related to work

Table 3: Testing of independence between statements of quality objectives and work instructions and respondents' awareness of QMS ISO 9001 implementation

Statements	Aware of ISO implementation	Disagree		Agree		p-value
		Freq.	%	Freq.	%	
Quality objectives						
Media advertisement on the university's academic program is clearly stated	Yes	19	39.6	29	60.4	0.001
	No	85	36.0	151	64.0	
I evaluated my lecturers' teaching performances using Course Delivery Assessment System (SPPK)	Yes	9	18.8	39	81.2	0.011
	No	17	7.2	219	92.8	
I am satisfied with my lecturers' teaching	Yes	17	35.4	31	64.6	0.042
	No	50	21.6	181	78.4	
Work instructions						
I was informed about the procedure during my course registration	Yes	23	47.9	25	52.1	0.011
	No	69	29.1	168	70.9	
I am clear about the procedures for postponement and suspension of studies	Yes	31	64.6	17	35.4	0.003
	No	97	40.9	140	59.1	
I received circulars regarding the registration date a week before registration begins	Yes	28	58.3	20	41.7	0.001
	No	80	33.9	156	66.1	
The SMP can be easily accessed	Yes	21	43.8	27	56.2	0.025
	No	65	27.4	172	72.6	
I was being informed about the dates for adding, dropping and suspension of courses 2 weeks before the semester commences	Yes	16	33.3	32	66.7	0.048
	No	48	20.3	189	79.7	
In case of late registration, I am being notified about the necessary procedures	Yes	31	64.6	17	35.4	0.006
	No	102	43.0	135	57.0	
I was informed about credit/unit exemptions procedures	Yes	34	70.8	14	29.2	0.001
	No	106	44.7	131	55.3	
My lecturers explained the scope and syllabus of each course during the first meeting	Yes	13	27.1	35	72.9	0.014
	No	31	13.1	206	86.9	
I was informed if there should be any postponement of lectures	Yes	25	52.1	23	47.9	0.012
	No	78	32.9	159	67.1	
Replacement lectures were conducted accordingly	Yes	16	33.3	32	66.7	0.002
	No	34	14.5	201	85.5	
I was informed about my marks for continuous course assessment	Yes	19	39.6	29	60.4	0.002
	No	45	19.1	191	80.9	
The information regarding examination was given at week 16	Yes	25	52.1	23	47.9	0.002
	No	69	29.1	168	70.9	
If barred from the examination, students will be informed a week before the examination starts	Yes	29	60.4	19	39.6	0.004
	No	89	37.7	147	62.3	
I am being notified if there should be postponement of the final examination	Yes	35	72.9	13	27.1	0.001
	No	113	47.7	124	52.3	
I am well-informed about the procedures for re-examination	Yes	34	70.8	14	29.2	0.010
	No	120	50.6	117	49.4	
I know about the procedures for appealing for re-assessment of examination grades	Yes	29	60.4	19	39.6	0.024
	No	101	42.6	136	57.4	

instructions received significantly different responses from students based on their knowledge of the ISO implementations.

In general, it can be concluded that in terms of work instructions, the more informed the students are about QMS ISO 9001, the more students agree with the statements. This implies that the university needs to increase the effectiveness of communication to students in the aspects of work instructions so that they are well-informed of the implementations of QMS ISO 9001.

Relationship between objective attainment and work instruction: This study examined the relationship between the achievement of the QMS ISO 9001 quality

objectives in TnL and the compliance of the TnL work instructions in QMS ISO 9001 from the students' perception.

Overall mean scores of agreement towards the 12 statements quality objectives and agreement towards 23 statements of work instructions were obtained. Results are shown in Table 4. The mean score for agreement towards the quality objectives ranged from 2.27-5.00 while the mean score for agreement towards the work instructions ranged from 2.00-5.00. The overall mean score for the former was slightly higher but both values can be considered as close to 75% agreement. The correlation coefficient obtained was 0.700 and the p-value was very small. This indicated that there is a very significant positive and strong relationship between both

Table 4: Relationship analysis of quality objectives and work instructions

Students' perceptions	Mean score (SD)	Correlation coefficient	p-value
Agreement towards quality objectives	3.7496 (0.479)	0.700	<0.001
Agreement towards work instructions	3.7493 (0.486)	-	-

perceptions of agreement. The more students agree with the objectives, the more they agree with the work instructions.

CONCLUSION

Findings show that respondents' perceptions of the implementation of QMS ISO 9001:2008 are fairly good. Respondents tend to agree more with the statements posed as they are more informed about the QMS ISO 9001. This study suggests a rigorous internal communication of QMS ISO 9001 that will get the students to agree more with the statements especially those aspects of work instructions that are directly concerned with TnL. This brings us to another finding that is the more the students agree with quality objectives, the more they agree with the work instructions. The attainment of quality objectives will be much easier with full commitments of all parties involved including the students. More importantly, other than the various documents and records of the TnL processes, the students as the internal customers can verify that the QMS ISO 9001 is in place for quality assurance in the UKM TnL.

RECOMMENDATIONS

The study managed to get some comments and suggestions from UKM students. Some of which are concerned with communication, infrastructure and review procedures. In the context of communication, students expected clear information, especially the procedures for deferment of examination, replacement examination and appealing course grade reassessment. These suggestions show that students have the intentions to know the procedures related to their programs. Besides, the students suggested the use of E-mails to notify latest and important information to them. Currently, UKM simply benefit from the SMP as a medium for checking latest updates for students. In terms of infrastructure, the students recommended improvements in the physical facilities and the ICT for optimal impact on TnL process.

In the context of the revision of ISO procedures, the students suggested that the review take into account their views on matters related to procedures in TnL.

REFERENCES

- Casadesus, M., G. Gimenez and I. Heras, 2001. Benefits of ISO 9000 implementation in Spanish industry. *Eur. Bus. Rev.*, 13: 327-335.
- Curkovic, S. and M. Pagell, 1999. A critical examination of the ability of ISO 9000 certification to lead to a competitive advantage. *J. Qual. Manage.*, 4: 51-67.
- Daud, S., D.A. Wahab, R.S.M. Sidek, N. Muslim, W.K. Mujani, K. Ibrahim and N.R. Suradi, 2011. A perception on the effectiveness of undergraduate and graduate programmes management through an ISO certification scope merger. *Proc. Social Behav. Sci.*, 18: 551-559.
- Jaafar, A., S. Abdullah, A.A. Latif, T. Paraidathathu and W.N. Wan Ahmad *et al.*, 2011. Reliability of student feedback on the Course Teaching Evaluation System (CTES) and system usability. *Proc. Social Behav. Sci.*, 18: 24-32.
- Kelemen, M.L., 2003. *Managing Quality: Managerial and Critical Perspectives*. Sage Publications, London, UK., ISBN-13: 9780761969044, Pages: 209.
- Krejcie, R.V. and D.W. Morgan, 1970. Determining sample size for research activities. *Educ. Psychol. Measur.*, 30: 607-610.
- Mola, N.B., 2007. The use of ISO 9001 quality standard in higher education institution libraries. *Universitat de Barcelona, Spain*. <http://www.ub.edu/bid/19balag3.htm>.
- Othman, R. and M.N.L.Y. Abdullah, 2007. ISO standard's implementation at private colleges: Academics and non-academics' perspectives. *Proceedings of the 1st International Conference on Educational Reform*, November 9-11, 2007, Mahasarakham University, Thailand.
- Papasolomou-Doukakis, I., 2003. *Managing Quality Through Internal Marketing: The Case of the UK Retail Banking Sector*. In: *Managing Quality: Managerial and Critical Perspectives*, Kelemen, M.L. (Ed.). Sage Publications, UK., ISBN-13: 9780761969044, pp: 177-181.
- Wiersma, W., 1995. *Research Methods in Education: An Introduction*. Allyn and Bacon, Boston, MA., USA.