Experience of the faculty of knowledge in the application of quality management system to obtain ISO certification

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Abstract. We had examined the applicability of ISO 9001: 2015 to the Al Ma'arif University College, and due to the absence of ISO 9004: 2015, we have sought to adopt ISO 9004: 2009 after minor modifications. After identifying the team responsible for writing the quality manual, procedural manuals and work instructions, we distributed the questionnaire questions, which represent the summary of standard 9004, to all relevant officials. After analyzing the findings, we found a large gap between what actually exists and what is applicable. We identified the constraints that prevent the application of the standard, and we gave the solutions to overcome them and the benefits expected to be achieved when applied.

1. Introduction

The quality management system was applied in accordance with the requirements of the standard of the quality management system ISO 9001: 2015 on the faculty facilities, which will reflect positively on the level of performance as it significantly reduces the waste in the capabilities of the faculty in terms of resources and staff time and also contributes to enable the university to analyze the problems faced and to deal with them Through corrective and preventive measures to prevent such problems from happening in the future, the system also enables all faculty and staff to participate effectively in management, to achieve development, improvement and organization that will have a positive psychological impact on the workers and therefore It will reflect positively on the college for an advanced global ranking, The internal audit will make the system work for the service of the College, in addition to that the system will contribute to linking all departments of the College and its units for harmonious institutional work instead of having a separate administrative system for each department or unit.

2. Practical application and results

Based on the desire of the Deanship of the College to implement the quality management system in accordance with the requirements of the standard of the quality management system ISO 9001: 2015 and qualify for a certificate of conformity, the induction session of the system was held on December 15, 2017 with a number of concerned with quality, and the course was introduced in the system on 20 December 2017. In addition to the analysis and study of the gap between the levels already in the application of the system and what is supposed to be applied over the course of 3-4 January, through many field visits to all the main units of the college included in the scope of work, including those

units Information Technology Continuing Education and Management Projects, operation and maintenance, financial and administrative affairs administration, development and quality division, admission, registration and laboratories unit. Since we have not obtained the ISO 9004 Guideline for ISO 9001: 2015, we have adapted the Guideline 9004: 2009 for the ISO 2008 Standard to fit the ISO 2015 Standards to prepare the College for ISO certification once we have obtained the ISO 9004 Guidelines. Guideline 9004: 2009 Self-evaluation as an important tool for the evaluation of all elements of the quality management system, in the faculty and all departments, which includes methods of leadership, strategy, management system, resources and processes. Quality applied to the college circuit and then identifies opportunities for improvement or innovation, or both. Finally, I see no significant change in ISO 9001: 2008 and the change is a formality in which the number of items has been changed from 8 to 10, with the emergence and focus of several new terms, and the disappearance of some terms and concepts from the old version of ISO 9001. What appeared in the new version of ISO 9001: 2015 is the following terms and concepts certain terms have also disappeared from the new ISO 9001: 2015 quality manual and management representative. External Provider instead of Supplier In accordance with the above, all the main procedures of the system were approved on 20/1/2018, and a number of faculty members were named to prepare the internal auditors of the system, in addition to preparing the internal audit plan for the system within the main units of the faculty including the scope of work during the first week of February 2018. In order to develop the mechanism of continuous improvement of the quality of the institutional performance and obtaining the ISO 9001: 2015 certificate from the Central Organization for Standardization and Quality Control, the College started to implement the quality management system in those units. Conduct internal audits, detect non-conformities and remedy them through corrective actions and conduct ongoing reviews and evaluations to verify that the system is working as intended, and find out where the identified problems can be improved, corrected or prevented. This is done through internal auditing by the faculty staff trained for this process or what is known as internal audit, as well as by an external certification body or what is known as external audit. All this is to ensure the application of the system entirely in accordance with the requirements of ISO 9001.
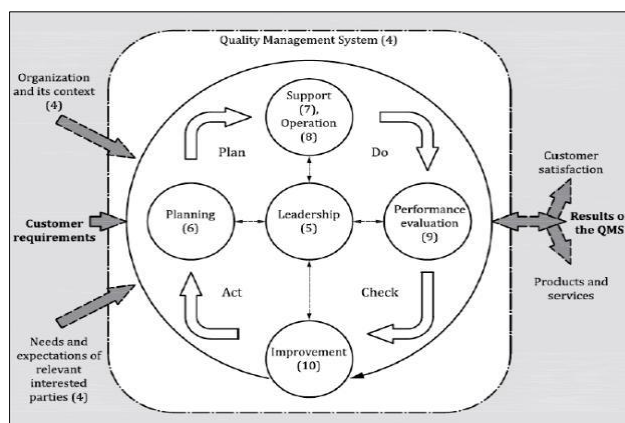

Figure 1. The elements of ISO 9001: 2015.

The Quality System Management Unit is one of the building blocks of the college for development and quality with its main tasks in maintaining the application of the quality system within the college and its main units after the college obtained the ISO 9001: 2015 certification including the scope of educational services, research and partnership. The college should review its performance against specific criteria, determine current maturity levels and identify strengths and weaknesses. Standards raised at higher levels of the college maturity model can help identify issues and issues that require attention from the college as well as identify improvements.

Tables A1 and A2 (in Appendix A) provide examples of complete tables based primarily on this standard used to determine the level of maturity in achieving sustainable success. Figure 2 shows the numbers of Annex A.

The main element	Level of maturity for sustainable success				
	Level 1	Level 2	Level 3	Level 4	Level 5
Element 1	Standard 1 The basic level				Standard 1 Best practice
Element 2	Standard 2 The basic level				Standard 2 Best practice

Figure 2. Comprehensive model of the elements of self-assessment, standards for maturity levels.

After distributing the questionnaire forms to the professors and staff in the units for the purpose of determining the level of maturity in the understanding and application of the specification, we analyzed the results and compared them with the elements in the guiding specification. It was found that there is a big gap between what is required and what is achieved. Figure 3 shows the level to be achieved and the actual achieved. Through field study and realism, we found out the reasons and obstacles that prevent the application of the system. We then developed appropriate solutions in accordance with the content of the standard.
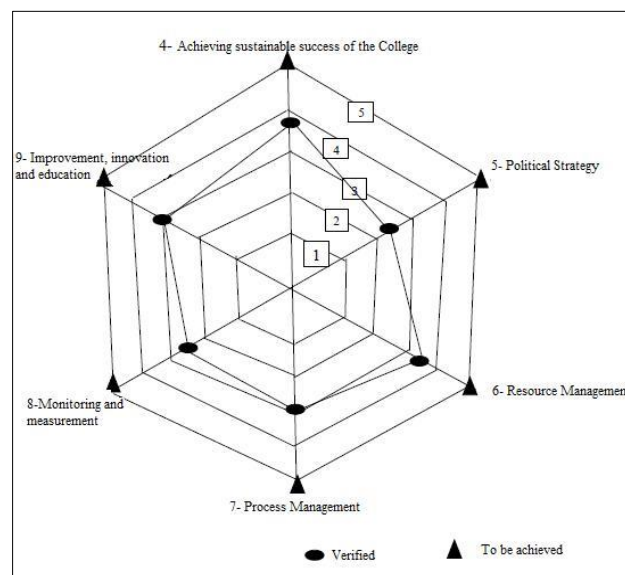

Figure 3. The level to be achieved and the actual achieved (verified).

3. Obstacles facing the application of the standard in the college
- Not to achieve a balance between the needs of the parties concerned emerging, and to identify the best possible performance as a major goal to achieve and follow a proactive approach oriented to learn while taking advantage of the energies of all teachers and staff at all levels and to achieve a

high reputation for the faculty through research and publication at the same time and make decisions based on The need for flexibility, responsiveness and consistency.

- Lack of sufficient understanding of the importance of the application of the standard in raising the efficiency of the educational process and thus obtain a graduate with the ability to achieve the wishes and needs of society in addition to the ability to research and development and the completion of graduate studies.
- The need to seek opportunities to improve the planning of scientific curricula and laboratories through comparative measurement. And the allocation of sufficient financial resources is to achieve the objectives of the college with a continuous process to re-evaluate this allocation. Through comparative measurement.
- The absence of a mechanism to involve the parties concerned to contribute to the success of the work of the College with their contribution to the implementation of effective monitoring and application of reporting mechanisms, which includes feedback from all concerned parties and reviewed by the Deanship with the provision of a mechanism to communicate with the College to ensure that the needs of the parties concerned.
- The absence of a risk analysis mechanism to identify additional opportunities for improvement, the failure of the College to carry out self-assessment processes at all levels, and the use of comparative measurement as a tool to identify opportunities for improvement, innovation and learning.

4. Solution

Solutions to be followed to achieve the optimum application of the standard and raise the educational level and graduate student achieve the ambition of the community and the relevant stakeholders beneficiaries:

- Focusing on achieving a balance between the needs of the new parties concerned, identifying the best possible performance as a main objective and achieving a proactive approach that is oriented to learning, taking advantage of the capabilities of all teachers and staff at all levels and making decisions based on the need for flexibility, responsiveness and consistency of performance.
- Distinguished planning to give scientific material and distribute effectively to produce a superior student, and to exceed the results achieved the average level of the college and maintain these results in the long term to be applied improvement and innovation in all faculty educational and service facilities.
- Integrate KPIs (Key Performance Indicators) in real time to monitor all processes and effectively deliver performance to all stakeholders involved in those processes.
- Setting priorities for continuous improvement on the input of new stakeholders and share the learning processes in the college with the parties concerned with stimulating creativity and innovation.
- The quality management system should cover the overall policy of the college with sustainable performance improvement and planning for the distant future (e.g. the next five years). With continuous planning and risk assessment in permanent and continuous is operations altogether to reduce all constraints.
- The needs and expectations of all parties concerned over the past years should be clearly met and the strategies of the college resulted in achieving the objectives of the college and meeting the needs of the parties concerned.
- The concerned parties should be involved and contribute to the success of the work of the College and confidence in maintaining this level of contributions while showing the desire and confidence in the continuity of maintaining this success. Contribute to the implementation of effective monitoring and the application of reporting mechanisms, which includes feedback from all parties concerned. The policy, planning and strategy dissemination is reviewed and updated using data

from the monitoring and analysis of the performance and work of the college. With the provision of a mechanism to contact the College to ensure that the needs of the parties concerned.

- Seeking opportunities to improve curriculum and laboratory planning through comparative measurement. And allocate sufficient financial resources to achieve the objectives of the College with an ongoing process to reassess this allocation.

- Compare the basic cost of the infrastructure and performance of the college with other educational institutions preferably those similar to them in the activity and is used contingency planning to reduce potential threats and discover more opportunities. And create processes to improve the work environment that support competitiveness and compare it with similar institutions in activity. Comparing the results achieved by the College of Information, Data and Technology Management with other colleges.

- Comparing the performance of the educational process with leading universities and using the results in the planning of the process.

- The monitoring process should result in reliable data that can be relied upon and a clear trend. The changes that occur or are expected to occur in economic policies, educational curricula, technological means, environmental protection or any social or cultural issues that may or may affect the performance of the faculty are monitored.

- Using systematic analysis of comprehensive data to predict the future performance of the college and confidence in the results of this prediction. Indicators contribute to appropriate strategic decision-making. Key performance indicators are selected and handled in a manner that ensures reliable information to predict serious trends and make strategic decisions.

- Risk analysis is used as a tool to prioritize improvement, with college reviews to involve other stakeholders in order to identify additional opportunities for improvement.

- Making strategic and policy decisions on the information collected and analyzed in a planned and systematic manner. The different sources of information show the quality of performance in all strategic and technical areas of the college.

- Review outputs should be shared with partners and used as input to improve the quality of graduates and processes that can affect their performance and satisfaction. The auditor's findings show that the efficiency of the actions taken will be demonstrated by a strong correlation between improvement activities and achievement of above-average college outcomes.

- Improvement should be included as a routine activity within the entire faculty as well as for its suppliers and partners. Focus on improving the performance of the faculty, including the ability to learn and change.

- Innovation activities are expected to make possible changes in the overall environment, so preventive plans must be developed to avoid or minimize the specific risks that can accompany innovation activities.

- The need to apply innovation to the student and the educational process and organizational structures and model of education and management system college, and must learn the culture of learning the possibility of the occurrence of risks and failure to occur, provided that this leads to learning from mistakes and discover more opportunities for improvement.

5. Expected benefits
- To significantly reduce the waste in the potential of the college in terms of resources and staff time.
- Enable the college to analyze the problems it faces and make them deal with them through corrective and preventive measures to prevent such problems from happening in the future.
- All faculty and staff can participate actively in the management, to achieve development, improvement and organization that will have a positive psychological impact on the staff and thus will reflect positively on the College to obtain an advanced global classification.
- Linking all departments of the college and its units for harmonious institutional work instead of having an isolated administrative system for each department or unit.

6. References

[1]   International organization for Standardization 2015 *International Standard ISO-9001:2015 International Standard for Quality Management System* London: ISO & IEC

[2]   International organization for Standardization 2009 *International Standard ISO 9004:2009 Quality Management Approach for Sustainable Success* London: ISO & IEC

[3]   International organization for Standardization 2008 *International Standard ISO 9001:2008 Quality Management Systems - Requirements* London: ISO & IEC

[4]   International organization for Standardization 2000 *International Standard ISO 9000:2000 Quality Management Systems - Requirements* London: ISO & IEC

Tick (√) to choose the most suitable:

Table (A1): Self-assessment of key elements - linking key elements to maturity levels.

What is the focus of management (deanship)?

Level 1	Level 2	Level 3	Level 4	Level 5
Focus on scientific material, students and their parents, and a number of reactions to problems and opportunities for improvement.	Focus on students and legislative and legal requirements with some structured procedures towards potential problems and improvements.	-Focus on the faculty of the teaching and staff -Processes are identified and applied to respond to problems and opportunities for improvement.	-Focus on balancing the needs of the current stakeholders. -Stress that continuous improvement is part of the concern of origin.	-Focus on balancing the needs of the current stakeholders. -Stress that continuous improvement is part of the concern of origin. -Focus on balancing the needs of emerging parties concerned. -The best possible performance is set as the main objective.

What is the leadership approach (administrative)?

Level 1	Level 2	Level 3	Level 4	Level 5
The curriculum is interactive and is based on top-down instructions.	The curriculum is interactive and is based on the decisions of managers of different levels.	The approach isproactive or preventive and delegated decision-making authority.	Proactive or preventive approach with a large involvement of workers (administrators, employees and teachers) in decision-making.	Proactive curriculum isoriented to learning while taking advantage of the energies of all workers at all levels.

How do you define important and vital things?

Level 1	Level 2	Level 3	Level 4	Level 5
Decisions are made based on input from the periphery and student families.	Decisions are made based on students' needs and expectations.	Decisions are made based on students' needs and expectations.	Decisions are made based on the deployment of the strategy in operational and operational needs.	Decisions are made based on the need for flexibility, responsiveness and consistency.

What you need to get the desired results?

Level 1	Level 2	Level 3	Level 4	Level 5
The material is managed in a random and unstructured manner.	The scientific material is managed efficiently.	The scientific material is managed effectively.	Scientific material is effectively managed in a way that takes into account the individual scarcity of resources.	The management and administration of the scientific material is planned And distribute them effectively to produce a superior student.

How are activities organized?

Level 1	Level 2	Level 3	Level 4	Level 5
There is an unorganized approach to the management of activities with some basic work procedures or instructions.	Activities are organized according to the function of each activity with the implementation of a basic quality management system.	The activities are organized according to a process-based quality management system that is effective, efficient and flexible.	There is an efficient and effective quality management system and interaction between all of its operations and is called the speed of response and improvement and cover the operations to the needs of the current stakeholders.	There is a quality management system that supports innovation, comparative measurement and coverage of current and emerging stakeholders' needs and expectations.

How are results achieved (monitoring and measurement)?

Level 1	Level 2	Level 3	Level 4	Level 5
Results are achieved randomly. Temporary corrective measures are issued when	Achieving and achieving some expected results Corrective and preventive measures shall be carried out	-Achieving and achieving the expected results especially with regard to the specific stakeholders.	-Achieve and achieve predictable, positive and consistent results while maintaining trends and	-The results achieved exceed the average level of the college and these results are maintained in the long run.

needed.	In a systematic way.	-Monitoring, measurement and improvement are always used.	tendencies. -Improvements and innovations are implemented in a systematic manner.	-Improvement and innovation are applied throughout the college.

How are priorities for improvement (improvement, innovation and learning) identified?

Level 1	Level 2	Level 3	Level 4	Level 5
Priorities for improvement are based on errors, complaints or required standards.	Priorities for improvement are based on student level data or corrective and preventive actions.	Priorities for improvement are based on the needs and expectations of some stakeholders as well as suppliers and all faculties.	Priorities for improvement are based on the inputs and inputs of other stakeholders as well as analysis of social, environmental and economic variables.	Priorities for improvement are based on input from emerging stakeholders.

How is the learning process (improvement, innovation and learning)?

Level 1	Level 2	Level 3	Level 4	Level 5
Learning is done randomly at the individual level.	Learning is done systematically through successful and failed college experiences.	The learning process is systematically applied and shared in the college.	The College adopts a culture of learning and participation that it uses in the process of continuous improvement.	The learning processes of the college are shared with the parties concerned while stimulating creativity and innovation.

Table (A2): Self-assessment of the detailed elements of item

Achieving sustainable success of the college (general)

Level 1	Level 2	Level 3	Level 4	Level 5
A quality management system is in place and based on business processes.	There is a quality management system based on the process approach.	There is an extensive quality management system based on the principles of quality management.	The quality management system in the faculty has been strengthened to integrate with other systems such as environmental management, occupational health and safety, and other activities.	The QMS covers the entire policy of the college.

Sustainable success

Level 1	Level 2	Level 3	Level 4	Level 5
It compares the actual performance of the college with the required level annually.	There are periodic performance reviews in the light of the action plan.	The results show a continuous and lasting improvement in performance over the past years.	There is sustainable performance improvement with planning for the near future (e.g. next two years).	There is sustainable performance improvement with planning for the distant future (e.g. the next five years).

College environment

Level 1	Level 2	Level 3	Level 4	Level 5
The College interacts with the changes that affect them.	There are plans to reduce the frequency of previous problems.	Risk assessments are carried out periodically to accommodate and identify potential impacts on the college.	There are contingency plans to reduce the risks to the college.	Planning and risk assessment in permanent and on-going operations to minimize all risks.

How learning is done (improvement, innovation and learning)?

Level 1	Level 2	Level 3	Level 4	Level 5
The ultimate purpose of the college is to make an annual profit.	The basic engine of the college needs of the student and his level of study.	The needs and expectations of all concerned individuals are met when possible.	Representation of stakeholders' needs and expectations Key inputs for decision-making by senior management.	The needs and expectations of all concerned parties have been met during the past years.