



THE APPLICATION OF ACCREDITATION STANDARDS INSTITUTIONAL IRAQI IN IRAQI UNIVERSITIES USING DEMING CYCLE (PDSA)" AN APPLIED STUDY IN THE COLLEGES OF SUMER UNIVERSITY – IRAQ"

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ABSTRACT

The aim of this study was to reveal the role of the Deming Cycle in the application of Iraqi institutional accreditation standards in colleges of Sumer University - Iraq. The study adopted the applied approach through the application of the Deming Cycle in the colleges of Sumer University, namely (College of Administration and Economics, College of Basic Education, College of Agriculture, College of IT, College of Science, College of Law) and knowing its contribution to the application of institutional accreditation standards. Data collection was based on the checklist in order to diagnose the gap between the actual application of institutional accreditation standards in the colleges of the University of Sumer and requirements specified in those standards. This study is the first of its kind in the Iraqi environment in terms of the use of cycle Deming (PDSA) in the application of criteria for institutional accreditation to Iraqi universities. The results revealed a large gap in the application of institutional accreditation standards in Sumer University colleges prior to the implementation of the Deming Cycle (PDSA). But after the implementation of the Deming Cycle (PDSA) , the gap Shrunken, indicating the contribution of the Deming Cycle to implementing institutional accreditation standards. This study is the first in the field of Iraqi institutional accreditation that divided institutional accreditation standards according to the stages of the Deming cycle (PDSA). The study presented a set of recommendations, the most important of which is the adoption of the methodology and method of the Deming cycle (PDSA) in applying the Iraqi institutional accreditation standards.



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1. INTRODUCTION

Universities are interested in the accreditation axis, as it represents a measure of the quality of their educational services, as accreditation has become the means and

tool to ensure the quality of services in educational institutions. The Ministry of Higher Education and Scientific Research Iraqi has paid attention to the application of Iraqi institutional accreditation standards in Iraqi public and private universities in order to keep

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pace with developments in the education environment at the regional and global levels. Sumer University is one of the Iraqi public universities that works to implement the Iraqi institutional accreditation standards. Sumer University consists of (College of Administration and Economics, College of Basic Education, College of Agriculture, College of IT, College of Law, College of Science). This study seeks to provide a scientific and practical method that contributes to the application of institutional accreditation standards, by using the Deming cycle (PDSA) as a continuous improvement cycle aimed at improving the degree of application of those standards.

Schomaker (2015) conducted a study in the Higher Education Accreditation Authority in Egypt, in which he concluded that the government must take decisive measures and decisions aimed at improving the quality system in universities. While the study of (Al-Widyan & Abu Qdais, 2018) concluded that the integration of institutional accreditation, program accreditation, and administrative quality contributes to improving the quality of educational services and that institutional accreditation is affected by many factors, including educational policies, authority, and government. As for the study (Al-Rikabi, 2019) is conducted in a number of Iraqi universities, it found a weakness in the application of Iraqi institutional accreditation standards in Iraqi universities, while public universities provide an educational environment for faculty members in a better way than private universities and colleges. A study (Akomolafe & Adesua, 2020) conducted in Public Universities in South West Nigeria revealed a statistically significant relationship between accreditation and administrative experience, and there is a big difference in the perception of the impact of accreditation on administrative experience. The study (Mohammed, 2020), which was conducted in a number of Iraqi universities, revealed a weakness in two of the Iraqi institutional accreditation standards, namely scientific research and academic curricula in Iraqi universities, due to the lack of strategic planning for the application of the two criteria indicators.

This study is considered the first of its kind in the Iraqi educational environment as it used one of the continuous improvement methods represented by the Deming Cycle (PDSA) in applying institutional accreditation standards. In addition, this study presented a model for dividing the Iraqi institutional accreditation standards according to the stages of the Deming cycle (PDSA) in order to facilitate the application of institutional accreditation standards in Iraqi universities and educational institutions. The Plan phase included the strategic planning standard for the institution, while the Do phase included standards (governance and management, financial and material resources, faculty members, and curricula), while the Study phase included standards (students, scientific research,

community service). As for the Act phase, it related to the continuous improvement plan.

2. ACCREDITATION

Accreditation focuses on evaluating the performance of educational institutions and evaluating their efficiency in terms of their ability to provide their services to meet the needs of society and the labor market.

2.1 The concept of Accreditation

Accreditation appeared at the beginning of the twentieth century in the United States of America as an independent and voluntary system aimed at raising the level of education and quality assurance. While its appearance in the United States in 1992 AD was among the responsibilities of the boards of financing higher education in England and Wales (Al-Hilali & Al-Sayed, 2009). As for the Arab world, 2001 was the beginning of the emergence of accreditation, which was one of the responsibilities of the Union of Arab Universities (<http://aaru.edu.jo>). This was followed by the emergence of accreditation standards at the level of Arab countries such as Egypt, Jordan, Saudi Arabia, Kuwait and other Arab countries, and Iraq is among the Arab countries that issued standards for accreditation in 2018 AD (Abdulzahra, 2018).

Accreditation is a relative term in Arabic literature. As the reason for its use is due to the prevalence of quality concepts in universities and educational organizations, accreditation is a public recognition of a university; college; school; or specialized study program in which certain qualifications and standards are officially recognized (Ali & Hadi, 2016). Hussain et al. (2017) identified accreditation as the quality assurance process in which an educational institution is evaluated against the criteria established by the accreditation body. (Hassan, 2018; Al-Eanzi et al., 2015) defined accreditation as an academic rank or a scientific status granted by official accrediting bodies to universities and educational organizations in exchange for meeting agreed quality standards. (McDavid & Huse, 2015) indicated that accreditation is a mechanism by which the educational program of an academic department or educational organization is evaluated by an external committee in accordance with the established standards. In case of passing the review, the program receives an official document indicating that it is approved (usually for a specific period of time). Kumar et al. (2020) indicated that accreditation is a process in which the university or program is subject to an evaluation process to determine the extent to which it meets the specified criteria. The evaluation process is carried out by experts or a counterpart group to the quality assurance of the institution or program of higher education. Accreditation can be defined as an indication that the university, college, or course of study applies the agreed quality standards.

Accreditation is one of the forms of quality assurance in higher education and a way to attract students at the local and international level (Reeves, 2019). The evaluation processes focus on academic accreditation on the institution and faculty, the systems, courses, experiences, and processes that make up the program or support it (context; inputs; processes; outputs and program outcomes) and the competencies of students expected to be obtained from the program or institution (McDavid & Huse, 2015). The accreditation bodies are numerous and differ among themselves on the basis of the nature and organizational climate of the country in which they operate, but they are similar to each other in the following aspects (Ayvaz & Mutçaloğlu, 2019):

- It possesses an economically and administratively independent organizational structure.
- The standards and processes developed by the experts cover a wide range of organizations in the labor market.
- Having high ethical standards and taking into account social responsibility.
- Policies and practices are transparent and accountable.
- Consider peer review principles.
- Recognized by a government agency.
- Shared governance.

2.2 Types of Accreditation

There are different types of accreditation, indicated by a number of researchers (Al-Eanzi et al., 2015; Khair Al-Din & Amrawi, 2017; Al-Mikhlaflafi, 2020):

- **Institutional Accreditation:** This type of academic accreditation is achieved through accreditation of the educational institution, college or university as a whole (Al-Mikhlaflafi, 2020). Al-Hilali and Al-Sayed (2009) indicated that institutional accreditation includes two types: (a. Initial accreditation" Sometimes called Preliminary accreditation; which is a basic step to ensure that the university or educational organization has met the basic basic standards such as infrastructure and equipment; laboratories and training places; stadiums and green spaces; faculty and the administrative body, among other, b. Academic Accreditation: Academic accreditation is obtained after the initial accreditation stage and this is done after careful examination of everything related to the academic programs at all levels; The faculty members, their qualifications, and their academic and academic experience; Students and their admission system their records; And to ensure the availability of sources of education; learning and other supplies.
- **Program accreditation:** Sometimes called specialist accreditation, it is intended to

evaluate study programs at the university or college and their quality assurance and the extent to which they meet the agreed criteria. This type is distinguished by its focus on well on details (Al-Eanzi et al., 2015; Ali & Hadi, 2016).

- **Professional accreditation:** This type of accreditation focuses on specific criteria for graduate employment. Acknowledgment of the capabilities to practice a certain profession in light of the standards issued by specialized professional bodies such as trade unions and unions. This type of dependence is limited to colleges of administration; engineering; law; education; and health professions and others (Al-Mikhlaflafi, 2020).

We can consider accreditation of all kinds as the minimum quality requirement, and it is one of the means of quality assurance in higher education.

2.3 The importance of Accreditation

The importance of accreditation lies in being a means to demonstrate academic standing and reputation among universities and educational organizations (Ali & Hadi, 2016) as it is considered as a quality assurance of its outputs. The importance of accreditation is represented by the following aspects (Hanh, 2019):

- **With regard to society:** universities and educational organizations are trying to achieve the level of social requirements.
- **For students and learners:** Universities and educational organizations provide them with the educational content; knowledge and experience they need. It works to provide them with the appropriate qualifications and capabilities to work in their field of specialization.
- **For employers:** familiarize employers with the reality of universities, the educational level, and the strength of study programs to help them attract graduates to work as employees.
- **With regard to competition:** Quality accreditation will raise the competitive spirit of universities and educational organizations by directing their attention to the factors of improvement of their.

3. DEMING CYCLE

One of the most well-known approaches in the field of designing the stages of the continuous improvement process is the PDSA Cycle approach, which was developed to become a general framework for the stages of continuous improvement activities. PDSA Cycle is the first letter of continuous improvement steps called the Shewart Cycle after the scientist who was the first to develop steps for continuous improvement Walter A. Shewartor the (Deming) cycle, who promoted and

developed them effectively in relation to the world Edwards Deming. PDSA Cycle includes the following phases:

- **Plan:** What is the scope in which improvement will take place, identifying the problem and analyzing it, and knowing the opportunities for improvement, and this step is to reach the improvement objectives and scope (Heizer & Barry, 2017)
- **Do:** This stage the plan is executed and progress is continuously monitored to measure improvements (Heizer & Barry, 2017) .
- **Study:** In this stage, the implementation results are examined and the data collected on the implementation are studied and evaluated (Leis & Shojania, 2016).
- **Act:** If the results obtained from the third stage are successful, then the documents and results related to the process subject to treatment are collected and become standard standards for the application (Heizer & Barry, 2017)

3.1 Benefits of a PDSA Cycle application

Leis & Shojania (2016) indicated that the PDSA cycle achieves the following benefits:

- Effective use of data: It is the collection of sufficient data and information to arrive at improved procedures that lead to improvement.
- Reducing failure rate of return.
- Determine the necessary performance improvements.
- Diagnose anomalies and nonconformities.
- Predicting the errors expected to occur in implementation.
- Spreading a culture of change towards improvement.
- Active participation of the parties concerned in the process of development and improvement.
- Reducing resistance when implementing the change

4. RESULTS

4.1 Iraqi institutional accreditation standards before applying the Deming cycle

Before implementing the Deming cycle, the current status of the university's colleges was examined. It is evident from Table 1 that the College of Business and Economics has applied the Iraqi institutional accreditation standards by (50.03%), which is the highest compared to other colleges at Sumer University. As for the College of Science, it achieved the lowest percentage of implementing standards. As it reached (40.90%). This indicates the existence of weaknesses and strengths in the faculties of Sumer University. As the strengths were represented in the faculties of Sumer University, despite its recent establishment, it works to evaluate and evaluate its performance in accordance

with the Iraqi national institutional accreditation standards. The university works to activate the legislations that encourage the transition from the central administration to the decentralized administration in order to reach the quality of the decisions taken. As there is in the colleges of Sumer University a declared financial system for incentives in addition to the existence of a guide to the rules of professional behavior, which indicates ethics and institutional transparency. Also, the existence of a declared and documented system that guarantees equal opportunities and achieves justice in employment, selection, incentives, and career and scientific promotions procedures in the university's colleges indicates the clarity of the policies, laws, regulations and instructions adopted in the performance of its work. The University has a fair controls and procedures to ensure the efficiency and expertise of faculty members when employed. The faculties of the university work to provide support services to faculty members, including research requirements and administrative and academic requirements that ensure the quality of the educational environment. In the colleges of Sumer University, there are clear and publicized student admission policies, in addition to a guide for student services. The University reviews admission policies and guidelines on a regular basis. In the faculties of the university there is also an administrative formation specialized in providing a database for graduates for the purpose of communicating with them and conducting training courses for them after their graduation for the purpose of increasing access to job opportunities in local and international organizations and companies in addition to providing psychological counseling and educational guidance services to its students. As for the scientific research standard, the university's colleges support, encourage and motivate faculty members to publish the article in international containers such as Scopus, Clarivate, Springer, and others. As for the academic program, the colleges of the university implement an appraisal educational curriculum for their open study programs to ensure that they meet the requirements of the labor market and society. As for the weaknesses of Sumer University colleges, they suffer from the strategic planning process. Whereas the organizational structures were not documented and announced, and therefore there is no evidence of job description, but the work was based on the expertise of the staff in addition to the absence of a system or program for developing the administrative and academic capabilities and their development of the functional cadre in the university colleges, which makes the documentation of university work procedures not fully documented. The university colleges suffer from the absence of plans to develop the skills and capabilities of faculty members in line with developments in university work. In addition to the lack of commercialization of practical research carried out by researchers, and the absence of evidence of scientific research ethics due to reliance on evidence provided by reputable scientific journals.

Table 1. The level of application of Iraqi institutional accreditation standards in Sumer University colleges.

Institutional accreditation standards							
Indications	Degree standardizing	College of Administration and Economics	College of Basic Education	College of Agriculture	College of IT	College of Law	College of Science
Educational institution strategy							
the strategic plan	42	10	10	12	4	4	4
Prospects, Procedures and applications	28	18.33	16.66	13.33	10.66	7.33	10.66
Governance and management							
Leadership and management	34	10	10	10	9	7.5	7
Ethics and institutional transparency	20	12.66	14.66	12.66	12.66	11.99	15.32
Capacity building and development	42	18.52	18.52	19.52	19.52	18.52	18.52
Clarification of policies, laws, regulations and instructions	44	24.99	23.99	22.99	23.99	22.99	25.99
Activities and procedures	40	13	16	12	16	11	15
Financial and material resources							
Financial resources	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Material resources	9.32	9.32	9.32	9.32	9.32	9.32	9.32
Faculty members							
Procedures for recruiting faculty members	18	10.33	9.33	4.32	11.66	8.66	9
The competence of the faculty member	32	8	10.66	5.33	6.66	8	5.33
The educational environment for a faculty member	6	6	6	6	6	6	6
Supportive services for a faculty member	44	25.33	23.33	22	28.33	26	24.33
Students							
Student services	66	45.33	44.66	41.65	44.66	42.99	41.65
Graduates	30	21	20	20	21	6	6
Psychological counseling and educational guidance services	6	6	6	6	6	6	6
Student activities and events and international cooperation	10	4	4	4	3	3	3
The role of students and contributing to decision-making	8	0	0	0	0	0	0
Scientific research							
The scientific research environment	54	23.32	18.66	19.32	25.66	25.99	21.66
Funding scientific research	24	8	7	9	9	5	8
Publication of scientific research	16	10	8	9	9	6	7
Marketing scientific research	8	0	0	0	0	0	0
innovation and creativity	12	3	3	3	3	3	3
Ethics of scientific research	6	5	5	5	6	6	5
Information sources	42	15	12.66	8.33	12	10.33	10.66
International cooperation in scientific and research activities	78	50	42	43	40	45	38
Community Service							
Policy of the educational institution for community service	40	15.33	18	13.66	13.33	14.66	11.66
Curriculum (academic content)							
Objectives	14	9	9	9	9	9	9
Curriculum content	34	27.66	25.33	23	23.33	24.66	18.66
Teaching and learning strategies	34	23.99	18.33	21.32	15.66	14.32	13.66
Evaluation, curriculum development and updating	56	36.33	32.66	31.66	42	40	41
International cooperation in curriculum evaluation	12	3	3	4	5	3	1
The total scores achieved for all standards	1000	500.38	477.04	438.05	467.71	424.86	409.02
Percentage of standard application degree		%50.03	%47.70	%43.80	%46.77	%42.48	%40.90
The size of the gap		499.62	522.96	561.95	532.29	575.14	590.98

4.2. Apply the Iraqi institutional accreditation standards according to the Deming Cycle

Figure 1 shows the Iraqi institutional accreditation standards according to the Deming cycle according to the author's opinion. The Planning stage of the Deming cycle included the criterion of the strategy of the educational institution, as it represents the future that the educational institution is working to achieve, as it includes the vision, mission, strategic goals, direct objectives and work programs that ensure the achievement of the vision of the educational institution. As for the Do phase, it includes standards (governance and management , financial and material resources, faculty members, and curricula) since these standards are the tools of the educational institution in achieving the quality of its outputs. As for the Do phase, it includes standards (governance and management , financial and material resources, faculty members, and Curriculum) since these standards are the tools of the educational institution in achieving the quality of its outputs. It is through these criteria that the strategy of the educational institution is fulfilled. As for the third phase of the Deming cycle, which is called the Study phase, it

includes the institutional accreditation standards that represent the outputs of the educational institution or the services provided by the educational institution and are the criteria (students, scientific research, community service). In this phase, the extent to which the educational institution's outputs meet local requirements is studied Regional and international. As for the fourth and final stage of the Deming cycle, it is called the Act phase, which means taking the necessary measures that address and correct deviations in performance by knowing the causes and factors leading to those deviations and working to avoid them in future performance. Should the educational institution to develop a system to monitor and evaluate the effectiveness and efficiency of the Deming cycle in the application of the standards of Iraqi institutional accreditation. They show the importance of communication and counseling as they work to exchange information and provide advice at every stage of the implementation of the Deming cycle.

Figure 2 shows the continuity of the Deming cycle and its role in the application of Iraqi institutional accreditation indicators in Sumer University colleges.

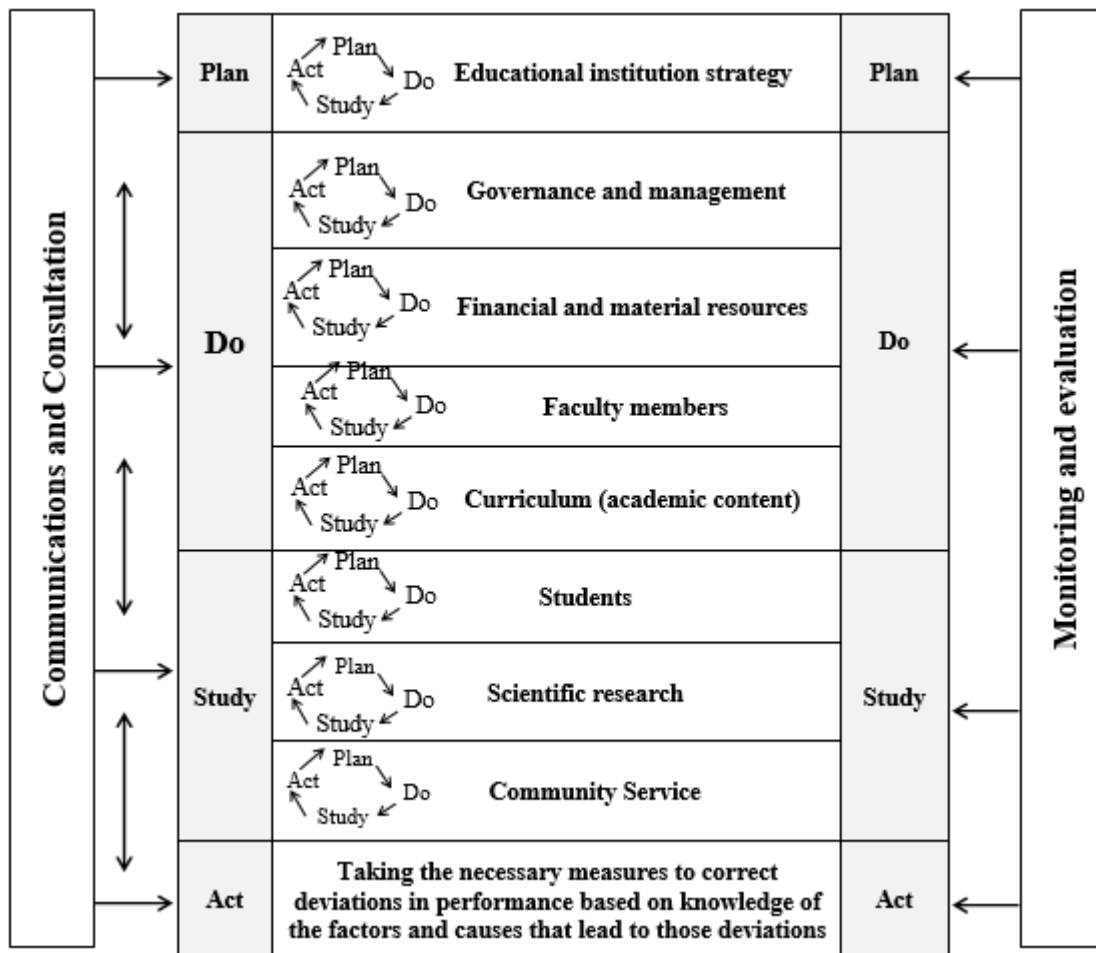


Figure 1. Application of the Deming Cycle to the Iraqi Institutional Accreditation Standards in Sumer University Colleges

procedures for implementing the Deming cycle phases in Sumer University colleges

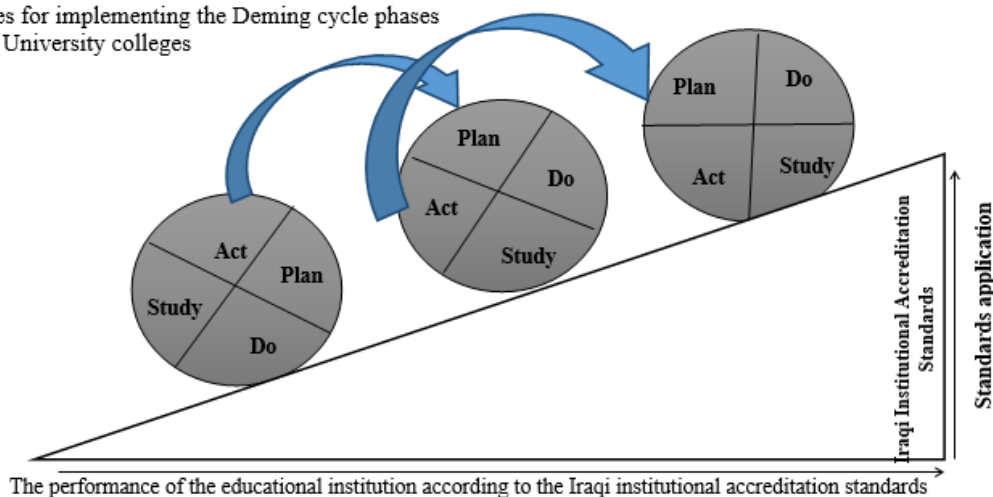


Figure 2. Continuity of the Deming Cycle and its role in implementing Iraqi institutional accreditation standards in Sumer University colleges

Table 2 shows executive procedures for implementing the stages of the Deming cycle at the University of Sumer. Table 3 illustrates the tools and methods used in implementing the procedures of the Deming Cycle stages. After implementing the Deming Cycle, improvements were achieved in the performance of Sumer University colleges. Table 4 illustrates the

application of institutional accreditation standards after implementing the Deming Cycle in Sumer University colleges. Table 5 shows the percentage of improvement that occurred in the performance of Sumer University in its application of the Iraqi institutional accreditation standards after applying the Deming Cycle.

Table 2. Steps and procedures for implementing phases of the Deming cycle in colleges of Sumer University.

Phases	steps and procedures	The responsible entity
Plan	<ul style="list-style-type: none"> - Analyzing the internal and external environment. - Creating a strategic plan that stems from the vision, mission and goals of the university. 	University Quality Assurance and Performance Council - The higher management board at the university.
Do	<ul style="list-style-type: none"> - Description of operations and activities. - Determine the entities and persons responsible for implementing the described operations and activities. - Follow-up of the implementation of operations and activities by the University Council, the University Quality and Performance Assurance Council, the Internal Control and Audit Department. 	All university entities, according to job description and specialization.
Study	<ul style="list-style-type: none"> - Measuring the extent of conformity of what has been implemented to the outputs and results of university colleges. - Defining the gap between actual performance and ideal performance according to the Iraqi institutional accreditation standards. - Determine the factors and causes leading to the deviations that cause the gap. 	Quality Circles - Internal audit team
Act	<ul style="list-style-type: none"> - Create an improvement plan to bridge and reduce the gap. 	University Quality Assurance and Performance Council - The higher management board at the university.

Table 3. Tools and methods used in implementing the procedures of the Deming cycle stages in the colleges of Sumer University.

Procedures	Tools and methods
Analyzing the internal and external environment	SWOTAnalyzing
Description of operations and activities	flow diagram
Measuring the extent of conformity of what has been implemented to the outputs and results of university colleges.	Checklist
Defining the gap between actual performance and ideal performance according to the Iraqi institutional accreditation standards.	
Determine the factors and causes leading to the deviations that cause the gap	Fishbone

Table 4. Measuring the application of Iraqi institutional accreditation standards in Sumer University colleges after applying the Deming Cycle.

Institutional accreditation standards	Degree standardizing	College of Administration and Economics	College of Basic Education	College of Agriculture	College of IT	College of Law	College of Science
Educational institution strategy	70	47.33	45.66	44.33	33.66	30.33	33.66
Governance and management	180	102.17	108.17	106.17	106.17	95	104.83
Financial and material resources	100	42.26	45.59	31.96	36.59	32.92	27.92
Faculty members	100	57.66	57.32	45.65	60.65	56.66	52.66
Students	120	82.33	80.66	77.65	80.66	63.99	62.65
Scientific research	240	153.32	135.32	135.65	143.66	140.32	132.32
Community Service	40	27.33	30	25.66	25.33	26.66	23.66
Curriculum (academic content)	150	108.98	91.32	90.98	101.99	93.98	88.32
Total	1000	621.38	594.04	558.05	588.71	539.86	526.02

Table 5. Comparison of the application of institutional accreditation standards after and before the application of the Deming cycle

Sumer University colleges	Apply standards after implementing the Deming cycle	Apply standards before performing the Deming cycle	Percentage of improvement in applying standards
College of Administration and Economics	621.38	500.38	12.10%
College of Basic Education	594.04	477.04	11.70%
College of Agriculture	558.05	438.05	12.00%
College of IT	588.71	467.71	12.10%
College of Law	539.86	424.86	11.50%
College of Science	526.02	409.02	11.70%

5. CONCLUSION

The results revealed that the colleges of Sumer University, despite its recent establishment, have the ingredients that help them in implementing the Iraqi institutional accreditation standards, which indicates the support of the higher management for academic and administrative quality programs. The existence of a gap between the actual application of the Iraqi institutional accreditation standards and the requirements of those standards indicates the presence of weaknesses in various aspects of the colleges of Sumer University, as it suffers from the small number of faculty members and functional cadres that possess experience and competence in educational and academic performance. The application of institutional accreditation standards requires educational institutions to have a clear vision of their provided services that are consistent with the requirements of the labor market and society, and to achieve this requires the provision of a set of components represented by the expertise, efficiency and effectiveness of faculty and staff members. And that the tasks and duties of the working cadres at the university, including employees and teachers, are directed towards specific goals and objectives. These goals and objectives stem from the strategy of the educational institution, which includes planning and targeted work programs to implement the requirements of practical research standards, students and community service.

The provision of educational services is represented by graduates, scientific research and community service, and with the aim of improving these services, Sumer University colleges should work to provide an appropriate educational environment, which is represented by material and financial resources and provide an efficient administrative and academic system. The implementation of these standards requires effort and deep study from the senior management and the Quality Assurance Council in the colleges of Sumer University. This study aims to present a model and a scientific and practical approach called the Deming Cycle (PDSA) that contributes to the implementation of these standards at a university. After the Deming Cycle was implemented in colleges of Sumer University, an improvement in the application of these standards was observed. The continued implementation of the Deming Cycle (PDSA) contributes to the further application of these standards. The authors presented a training program for quality workers in Sumer University colleges on how to implement the Deming Cycle (PDSA) and its contribution to the application of Iraqi institutional accreditation standards.

6. LIMITATIONS AND FUTURE RESEARCH

This study was only conducted in the colleges of Sumer University - Iraq. The study adopted the case study

method. The future researcher can expand the scope of the study by taking several governmental and private universities or conducting a study on the application of Iraqi institutional accreditation standards in Iraqi universities using the DMAIC methodology.

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