

## The Role of Universities, Higher Education, and Scientific Research in Implementing Global Quality Standards

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### Abstract

The world is experiencing rapid and continuous transformations in all areas of life, particularly in education in general and higher education in particular. Higher education is considered one of the pillars of the knowledge economy, contributing to the development of creative capacities and the enhancement of qualifications to meet societal needs in various aspects. This necessitates that universities focus on the quality of higher education and align with global accreditation standards.

In Algeria, the higher education sector has undergone continuous developments and reforms since independence. One of its key milestones was the adoption of the LMD (Licence-Master-Doctorate) system, which aimed to keep pace with global developments and address the shortcomings of the traditional system. This transition has led to the implementation of a quality assurance system in higher education—CIAQES—with the objective of applying best practices in university governance and management. The goal is to ensure the successful implementation of quality assurance in Algerian higher education institutions in accordance with international standards. In this context, scientific research plays a crucial role in implementing global quality standards by informing policy, guiding institutional practices, and supporting continuous improvement. It helps ensure that universities align their programs and reforms with international benchmarks.

**Keywords:** Higher education; quality of higher education; global standards.

## **1. INTRODUCTION**

Higher education is one of the most vital fields where quality plays a crucial role, given its strong connection to overall social development. As a public institution, the university provides highly objective services to individuals and organizations with diverse functions. Some of its key principles include continuity, inclusivity, equality, adaptability, transparency, participation, and complaint management.

The rapid transformations in higher education worldwide have emphasized the need for universities to maintain high-quality education and adhere to international accreditation standards. In Algeria, the higher education sector has undergone significant reforms, particularly with the adoption of the LMD (Licence-Master-Doctorate) system. To ensure the effectiveness of these reforms, a quality assurance system (**CIAQES**) has been implemented to enhance university governance and management. However, a critical question remains: To what extent have Algerian universities successfully adopted and implemented international quality assurance standards in their educational approaches? This study seeks to explore the effectiveness of these measures and identify challenges in aligning Algerian higher education with global best practices.

The primary objective of this study is to assess the implementation of quality assurance standards in Algerian higher education institutions and evaluate their alignment with international accreditation benchmarks. Specifically, the study aims to examine the extent to which Algerian universities have integrated quality assurance measures in line with global standards. In this regard, scientific research plays a key role by providing evidence-based insights that support the development, implementation, and continuous improvement of quality assurance practices, ensuring alignment with global expectations.

Based on this, to what extent have Algerian higher education institutions implemented quality assurance standards in alignment with international accreditation benchmarks, and how does scientific research contribute to this process?

This study is significant as it provides a critical analysis of Algeria's higher education reforms and their effectiveness in achieving quality assurance. The findings offer valuable insights for policymakers and educational institutions to

refine their quality assurance strategies, ensuring better alignment with international standards. Additionally, by identifying challenges and opportunities, the study contributes to institutional development by helping Algerian universities enhance their governance, curriculum, and overall educational quality. Furthermore, understanding the Algerian experience adds to global discussions on higher education reforms, particularly in developing countries striving to meet international accreditation frameworks.

## **2. Quality in University Education**

Quality is defined in terminology as "producing excellence in speech and action" (Ibn Manzur, 1984, p. 72).

### **2.1 Quality Assurance:**

Quality assurance refers to a set of procedures and activities undertaken by universities according to predefined standards to ensure that educational products or services consistently meet these standards (Harvey & Green, 1993). It serves as the guiding force behind the success of any program, system, or course and aims to minimize the occurrence of failures. Examples of quality assurance practices include curriculum development, continuous academic program reviews, establishing incentives, and enhancing the competencies of faculty members and university staff (Al-Najjar, 1999, p. 73).

### **2.2 Knowledge Quality:**

Roshdi defines educational quality as "a set of characteristics and attributes that accurately and comprehensively reflect the essence and condition of education, encompassing all its dimensions—inputs, processes, outputs, feedback, and ongoing interactions that contribute to achieving desired and appropriate goals for all" (Roshdi et al., 2009, p. 21).

Quality is also described as anything that enhances students' intellectual and imaginative capacities, improves their comprehension levels, strengthens their problem-solving skills, and enhances their ability to effectively communicate information. Some consider it to be the overall competency a student attains in cognitive, psychological, social, and moral aspects, making them desirable in the job market after graduation and satisfying the expectations of various societal institutions (Ahmed, 2003, p. 99).

The attributes of university knowledge quality manifest in preparing students to adapt to the massive flow of information, continuous changes, and

rapid technological advancements. This enables them to effectively select high-quality information and interact with it smoothly, especially if they have strong proficiency in foreign languages. Here, special emphasis is placed on English as the global scientific language, which facilitates communication, comprehension, and broader access to internationally available knowledge.

The **American Society for Quality Control (ASQC)** defines quality as "a set of characteristics and features of a product or service that make it capable of meeting customer needs." This definition highlights the importance of a product's ability to fulfill customer requirements.

According to the International Organization for Standardization, quality is defined as "the inherent capability of a product, system, or process to meet the requirements of customers and other relevant stakeholders" (cited in Seddiki, 2003, p. 23).

Quality can also be defined as "a set of mechanisms regularly applied at the institutional or program level to ensure adherence to a minimum commitment to fundamental principles, thereby meeting the needs and expectations of stakeholders."

### **3. Standards of University Education Quality**

Achieving quality in university education requires adherence to specific standards and levels, which are categorized as follows:

#### **A- At the Institutional Level:**

- Research conducted and approved by global specialized organizations and institutions.
- Intellectual and scientific contributions made by the institution.
- Ranking among the top positions in global academic university rankings and the number of patents obtained.
- Number of accredited research teams and laboratories.
- Number of faculty members holding high academic ranks and degrees.
- Scientific events and activities organized by the institution.

#### **B- At the Faculty Level:**

- Ability to effectively deliver knowledge to students and proficiency in foreign languages, particularly English, as an indicator of quality.
- Contribution to the university's scientific output.
- Mastery of the subject matter.

- Encouraging students' intellectual growth and creativity.
- Proficiency in modern teaching methods and techniques.
- Availability of an adequate number of faculty members for pedagogical supervision and student guidance.

### **C- At the Student Level:**

- Full and thorough understanding of academic curricula within their specialization.
- Ability to apply acquired university knowledge in the workplace.

A set of standards has been established by the Permanent Evaluation Committee for University Education Quality in British Universities and the Higher Council for the Evaluation of University Education Quality in American Universities, which include:

- Academic level and knowledge background.
- Regular participation in the educational process.
- Receptiveness to feedback.
- Development of national awareness and ethical responsibility.
- Enhancement of analytical thinking skills.
- Degree of personal engagement.
- Understanding of student needs.
- Adherence to scientific methodology.
- Development of competitive intellectual skills.
- Awareness of teaching method objectives.
- Fostering a deep and critical perspective.
- Awareness of the role of academic capability(Halawa, p. 22).

### **4.The Nature of Higher Education Services**

Higher education is one of the fundamental sectors that contribute to various fields, serving as a foundation for numerous projects. It is a crucial public service primarily under the responsibility of the state, which strives to ensure its quality as a key driver for both economic growth and comprehensive, sustainable development. This raises important questions: What constitutes higher education services? What are their characteristics? What are their different types?

#### **4.1 Concept of Educational Service**

Gates defines education as:

*"A continuous change in behavior that requires repeated effort until the individual achieves responses that satisfy their motives and fulfill their desires."*  
(cited in Al-Abadi et al., p. 34)

Education is thus a continuous process of behavioral transformation aimed at meeting personal needs and aspirations. Learning occurs through a structured flow of knowledge from the source to the learner, following these steps:

- The learner receives new knowledge and perceives it as unfamiliar information.
- The learner examines the new knowledge to assess its validity, leading to its acceptance or rejection.
- Finally, the learner processes the acquired knowledge by encoding, organizing, and prioritizing it.

#### **4.2 Definition of Higher Education Service**

Higher education differs from rote learning, as it is based on a mechanism that emphasizes selection, analysis, and synthesis rather than mere information accumulation. The general consensus among scholars defines higher education as a process that fosters the development of critical tools for handling information effectively.

Higher education is broadly defined as:  
*"All types of studies, training, or research-oriented education conducted after secondary school at a university or an officially recognized institution."*

The Algerian legal definition states:  
*"Any type of training or research-oriented education provided at the post-secondary level by higher education institutions. It may also include high-level technical training offered by state-accredited institutions."*  
(Official Gazette, 1999, p. 05)

The operational definition of higher education service is:  
*"A set of benefits provided by higher education institutions that attract outstanding secondary school graduates, focusing on developing their knowledge and skills to adapt to external changes and meet societal demands. This ensures the satisfaction of stakeholders benefiting from these services."*

### **5. Characteristics of Higher Education Services**

#### **A. Intangibility**

Higher education services cannot be physically examined or returned if they fail to meet quality standards. Unlike tangible goods, their quality is often difficult to assess before receiving them. However, some aspects of the service can be made tangible, such as the use of teaching aids, infrastructure, and faculty

presentation, which significantly impact students' evaluation of the education quality(Hill, 1995).

### **B. Simultaneity (Inseparability)**

This characteristic refers to the simultaneous production and consumption of educational services. Like other services, education is delivered and received at the same time, relying heavily on direct interaction between the instructor and the student(*Al-Sahan, 2002, p. 352*).

### **C. Heterogeneity**

Educational services are inherently diverse and cannot be standardized, as their delivery varies based on several factors, such as:

- Differences in faculty competence and expertise.
- Variability in teaching environments and times.
- Degree of interaction between professors and students(*Maringe & Gibbs, 2009*).

### **D. Non-ownership**

Educational services cannot be owned or transferred from the provider to the recipient. Like other services, they are consumed upon delivery and do not involve the transfer of tangible assets.

### **E. Difficulty in Quality Assessment**

Evaluating the quality of education is a complex and delayed process. Its outcomes are only realized after students graduate and enter the workforce. Moreover, individuals assess educational quality based on different personal perceptions, making it essential to identify the criteria used by students and professionals in their evaluations.

## **7. Types of Higher Education Services**

Universities provide two types of services to society: direct and indirect.

### **First: Indirect Services of Higher Education Institutions**

These services primarily involve education and scientific research, which work towards offering high-quality teaching and research programs aligned with societal needs. This category is the most prevalent, as it encompasses the core functions of higher education institutions.

#### **A. Education**

Education involves the active participation of learners in achieving set objectives. The fundamental principle of university education is not merely the retention and recall of information but the students' understanding and ability to apply knowledge in real-life situations.

## **B. Scientific Research Function**

Scientific research plays a critical role in driving progress, fostering innovation, and ensuring continuous development. To maximize its benefits, several key factors should be considered:

- Directing research to meet market and societal needs.
- Focusing research efforts on innovation, renewal, and knowledge enrichment.
- Ensuring the originality of research problems.
- Choosing contemporary and relevant topics.
- Using high-quality research tools.
- Enhancing the practical application and impact of research findings.

## **Second: Direct Services (Community-Oriented Services)**

Higher education institutions aim to develop and strengthen their engagement with the external community by fostering cultural, social, and economic development. Universities serve as a reference framework for guidance and consultation, providing faculty members and students with opportunities to share their work and research with society through:

- Providing society with qualified and specialized professionals.
- Promoting universally accepted values, such as peace, justice, equality, solidarity, and human rights.
- Preserving human heritage and safeguarding intellectual and cultural values.
- Utilizing university expertise in administration, academia, and research to support various sectors of society.
- Organizing scientific sessions to facilitate knowledge exchange and benefit from expert contributions.

## **8. Quality in Higher Education**

According to the UNESCO Education Conference, held in Paris, October 1998, quality in education is a multi-dimensional concept that should encompass all functions and activities of education, such as:

- Curricula

- Educational programs
- Scientific research
- Students
- Buildings, facilities, and tools
- Community service provision
- Internal self-education
- Establishing internationally recognized quality comparison standards

Based on this concept, quality in education must cover all elements of the higher education system, including inputs, processes, outputs, and feedback mechanisms.

From various scholarly definitions of quality in higher education, we can conclude that:

- Quality is a relative and multi-dimensional concept, making it difficult to define a universal and comprehensive definition agreed upon by all. A good example of this is what Deming stated when asked about quality—he simply answered, "I don't know."
- Quality in education serves as an indicator of several key aspects, including:
  - Error-free educational services
  - Achieving intended goals and expected outcomes (effectiveness)
  - Optimal utilization of educational resources to ensure high-quality outputs (efficiency)

## 9. Concept of Standard or Quality Measurement

The **American Society for Quality (ASQ)** defines a quality standard as:

*"A benchmarking process that allows an institution to measure its performance against the best-performing organizations in the same field. It enables the institution to identify how these organizations achieved their level of excellence and use this knowledge to improve its own performance."* (IIEP-UNESCO, P.21)

In general, several key terminologies appear in quality assurance literature, including standards, benchmarks, and internal indicators. These terms were highlighted in the European Association for Quality Assurance in Higher Education (ENQA) 2005 report, which established guidelines and standards for ensuring quality in European higher education. The key quality standards are as follows:

### A. Quality Assurance Policies and Procedures

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- Institutions should have policies and procedures in place to ensure the quality and standards of their programs and degrees.
- They must explicitly commit to developing a culture of quality assurance in their work.
- To achieve this, institutions should implement a continuous improvement strategy that is legally recognized and publicly accessible.
- These policies should also encourage the active participation of students and other stakeholders.

### **B. Approval, Monitoring, and Periodic Review of Programs and Degrees**

- Institutions must establish formal mechanisms for approving, monitoring, and periodically reviewing their programs and degrees.

### **C. Student Assessment**

- Institutions must apply transparent, consistent, and published criteria, regulations, and procedures in student evaluations.

### **D. Quality Assurance in Teaching Staff**

- Institutions must have mechanisms to ensure that faculty members are qualified and competent in their roles.
- Faculty development programs should be in place to enhance teaching and research skills.
- External reviewers should have access to faculty qualifications, and their reports should include feedback for improvement.

### **E. Learning Resources and Student Support**

- Institutions must ensure that learning resources and student support services are sufficient and appropriate for all programs offered.

### **F. Information Systems**

- Institutions should have effective data collection, analysis, and utilization systems to manage academic programs and other activities.

### **G. Public Information**

- Institutions must regularly publish and update accurate, unbiased, and quantitative and qualitative information about their programs and degrees.

## **10. Conditions for the Proper Implementation of Quality Standards**

The following internationally agreed-upon conditions are essential for the effective implementation of quality standards:

- Establishing agreed-upon quality standards that align with international

benchmarks.

- Disseminating information about these standards and training relevant stakeholders on their application.
- Ensuring genuine commitment from all parties, from students to institutions, to adopt these standards as a long-term strategy rather than a temporary measure.
- Collaboration among stakeholders to establish clear and consistent quality standards that apply to all.
- Practical application of quality standards.
- Periodic review and revision of standards based on work-related changes and emerging circumstances, ensuring flexibility.
- Modifying or updating standards in consultation with global and regional experts.

## **11. The Path of Higher Education in Algeria**

Since independence, Algeria has placed significant emphasis on higher education, recognizing its role in driving comprehensive national development. The Algerian government has tasked the sector with supplying the country with highly skilled human capital, particularly to address the severe shortage of professionals following the departure of colonial administrators. Over time, the higher education sector has undergone a series of reforms to enhance its effectiveness and align it with local and international developments.

## **12. A Historical Overview of Higher Education Development in Algeria**

The Algerian higher education system has evolved through various phases, influenced by the country's economic and social development strategies since independence. The development of Algeria's higher education system can be divided into four key phases:

### **1. Establishing the Foundations of the National University**

- Laying the groundwork for a national higher education system after independence.

### **2. Implementing the 1971 Higher Education Reform**

- This reform aimed at structuring and modernizing the system.
- The university map was introduced in 1982 and updated in 1984 to optimize higher education expansion.

### **3. Enhancing and Rationalizing the System**

- In line with societal and economic transformations, the Higher Education Law (Law 05-99, enacted on April 4, 1999) sought to

make the system more efficient and responsive to national development needs.

**4. Adopting the Global LMD System (License, Master, Doctorate)**

- Algeria aligned its higher education system with international standards by adopting the LMD system, fostering compatibility with global academic frameworks.

**13. Implementation of the Quality Assurance System in Algerian Higher Education Institutions**

The reforms in Algerian higher education and the quality assurance system are relatively new. The focus on quality in higher education institutions began with the Higher Education Orientation Law on February 13, 2008, which for the first time allowed the establishment of private higher education institutions while mandating their monitoring and evaluation through a specialized committee. Additionally, the law laid the groundwork for other committees responsible for licensing and accreditation.

The National Evaluation Committee (CNE) was assigned the task of assessing all functions of higher education institutions against predefined objectives to enhance quality. It also established a set of mandatory quality requirements that institutions must adhere to. Failure to comply with these standards could lead to license revocation by the Minister of Higher Education.

To implement quality assurance in higher education institutions, several steps were outlined:

1. Raising awareness among stakeholders about the importance of applying a quality assurance system in higher education institutions.
2. Promoting a culture of quality and internal evaluation within higher education institutions.
3. Establishing a Quality Assurance Unit within each institution.

In this context, the Ministry of Higher Education and Scientific Research organized key events, including:

- The National Conference on Higher Education and Scientific Research (May 19-20, 2008) under the theme: *"Mid-term assessment after four years of implementing the LMD system."*
- The International Conference on Quality Assurance in Higher Education

(June 1-2, 2008) under the theme: "*Quality assurance in higher education: Reality and Requirements.*"

These conferences featured the participation of university professors, experts from the World Bank, UNESCO, the European Union, and Maghreb countries, all of whom emphasized the necessity of implementing a quality assurance system in Algerian higher education institutions.

Following these discussions, Ministerial Decree No. 167 (dated May 31, 2010) established the National Committee for Implementing Quality Assurance in Higher Education and Research (CIAQES), composed of experts, faculty members, and senior officials from the Ministry of Higher Education and Scientific Research. The committee's objectives include:

- Supporting the development of quality assurance practices in higher education institutions.
- Monitoring and promoting quality assurance measures, primarily through self-assessment to improve university governance.
- Developing appropriate tools and mechanisms for the creation of an evaluation body.

The committee's activities were divided into three regional seminars in Eastern, Western, and Central Algeria. The Ministry of Higher Education is responsible for analyzing and unifying the outcomes of these seminars.

The National Committee also collaborates with relevant agencies to:

- Develop a national reference framework with quality assurance standards aligned with international benchmarks.
- Establish selection criteria for leading higher education institutions and quality assurance officers within each institution.
- Launch an awareness campaign targeting universities and develop training programs for quality assurance personnel.
- Implement and oversee quality assurance measures within institutions.
- Organize self-assessment and external evaluation processes for institutions and targeted activities.
- Ensure monitoring and supervision in the field of quality assurance.

## **14. CONCLUSION**

Despite the progress made in Algerian universities toward implementing quality standards, further advancements are necessary. Achieving high-quality education requires commitment from all stakeholders, from top-level policymakers to individual universities, each adapting standards to their specific contexts. This includes improvements in:

- Curricula and academic programs
- Training methods
- Educational resources and infrastructure

However, challenges remain in achieving globally recognized quality standards, especially in areas like institutional accreditation and research content quality. Overcoming these challenges necessitates learning from leading countries in comprehensive quality assurance in higher education.

### **Recommendations:**

- ✓ Train university faculty on modern teaching and student supervision techniques, aligning with established quality standards. Encourage the adoption of new educational technologies to keep pace with scientific research advancements.
- ✓ Allocate appropriate budgets to develop educational software and applications, particularly in artificial intelligence, to enhance continuous monitoring and updates in higher education.
- ✓ Increase investment in creating teams and specialists dedicated to quality improvement projects, ensuring better performance in scientific research and academia.
- ✓ Expand training sessions on quality assurance strategies and mechanisms for both students and faculty.
- ✓ Equip universities with modern facilities, tools, and qualified personnel to enhance educational and research quality.

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