



The DIGITAQ Project: Building Digital Capabilities for Managing Higher Education Quality Assurance System in Algeria and its Impact on Enhancing University Visibility

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Abstract

This study highlights the key concepts of quality assurance in higher education and digitalization, emphasizing their importance as major trends both nationally and internationally in the university sector. Additionally, it examines the experience of the Algerian university regarding quality assurance and presents the international partnership project, DIGITAQ, aimed at enhancing the digital capabilities of the higher education quality assurance system in Algeria. Through an analytical approach, this research aims to identify the contributory aspects of DIGITAQ in improving the visibility of the Algerian university.

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1. Introduction:

In the era of technological advancement marking this third millennium, the shift towards digitization has become a real challenge for various organizations, urging them to consistently modernize their information management and processing systems. This is due to the imperatives of competitiveness and the quality stakes that this era, known as the information and communication technology revolution, has established.

It is clear that the higher education sector, like other fields, is called upon to meet the challenge of applying information technologies and digitizing academic activities, from education to research. This is all the more important considering the national and international orientations aiming to establish mechanisms guaranteeing the quality of these activities.

It has become imperative to implement the use of information technologies in managing quality assurance systems, as an approach to enhance the processes of control, evaluation, and improvement of university quality. This is illustrated by the experiences of numerous international academic institutions, such as those that have made significant progress in the application of quality assurance.

The university system in Algeria has not been left behind in these international

trends aimed at implementing the quality assurance system, as evidenced by measures taken in the field, such as the establishment of the Commission for Implementing a Quality Assurance System in Higher Education (CIQASHE) in 2010, the restructuring of the National Evaluation Committee (NEC), the establishment of quality units in all universities, and the training of the heads of these units. This reflects the willingness of academic stakeholders to meet the challenge of ensuring the quality of university education and scientific research.

Furthermore, there is a trend towards strengthening frameworks of international cooperation in the field of quality assurance by creating opportunities to participate in international partnership projects, focused on the exchange of experiences and the utilization of best practices in using information technologies in managing quality assurance systems.

Given the needs observed in higher education in Algeria, particularly regarding quality assurance management and, notably, the strengthening of the efficiency and adequacy of the information system, as well as the necessity to standardize quality standards and indicators among different university institutions to facilitate control and evaluation procedures of quality levels, it has become necessary to move towards the creation of a digital platform that addresses these needs and contributes to the

management of the quality assurance system of Algerian universities in accordance with international standards.

The project for digitizing the quality assurance system of Algerian universities, entitled (DIGITAQ), which falls within the framework of the ERASMUS+ program, represents a promising start that reflects this orientation towards creating a digital platform for managing the quality assurance system among several Algerian and European universities. It is expected that Algerian universities will benefit from mechanisms for using information technologies in managing quality assurance systems, thereby contributing to the improvement of the efficiency of these systems.

1.1. Problem Statement:

Based on the previously mentioned considerations, the problem statement of this study focuses on the following inquiries:

- What is the concept and the objectives of quality assurance in higher education?
- What does digitization in higher education entail, and what are its major implications?
- What are the dimensions of the Algerian university's experience regarding quality assurance?

- What are the aspirations and objectives of the (DIGITAQ) project for digitizing the quality assurance system in higher education in Algeria?

- What are the contributions of the (DIGITAQ) project towards enhancing the visibility of Algerian universities?

1.2. study objectives:

The present study aims to achieve the following objectives:

- Understand the concept of quality assurance in higher education as one of the current trends in both national and international contexts.

- Shed light on the concept of digitization in higher education institutions and the justifications for this direction.

- Present the experience of Algerian universities in terms of quality assurance by identifying the key measures taken in this regard.

- Define the (DIGITAQ) project for digitizing the quality assurance system in higher education in Algeria as an international partnership project.

- Examine the main dimensions of the (DIGITAQ) project's contribution to improving the visibility of Algerian universities.

1.3. Study Importance:

The research holds significance in its elucidation of the concepts of digitization in higher education institutions and quality assurance as current trends in this sector. This serves to heighten awareness among academic stakeholders regarding the pivotal role of implementing information technologies in higher education. Additionally, it underscores the positive outcomes achievable in bolstering the efficiency of managing and administering quality assurance systems through digitalization.

Moreover, the research's importance is underscored by its exposition of the Algerian university's experience in quality assurance. It also highlights the university's commitment to advancing international cooperation in this field through the adoption of the project for digitizing the quality assurance system (DIGITAQ). This has the potential to establish the project as a promising initiative aimed at enhancing the effectiveness of quality process management, while pinpointing the dimensions of the project's contribution to elevating the visibility of Algerian universities.

1.4. Study Methodology:

This study employs a descriptive approach to illuminate the concepts of digitization within higher education institutions and quality assurance. This methodology then

enables the delineation of the Algerian university's experience in quality assurance, achieved through a careful examination of the principal measures implemented in this context. Similarly, the project aiming to digitize the quality assurance system in higher education in Algeria (DIGITAQ) is presented through an analytical approach, delineating its objectives and the methodology adopted. Ultimately, this process culminates in the identification of the pivotal dimensions contributing to the heightened visibility of Algerian universities on the global stage.

2. Quality Assurance:

2.1. Overview:

In contemporary higher education systems, various shared trends necessitate adjustments and reforms at both national and institutional levels. Recent studies and research, including the proceedings of the World Conference on Higher Education (UNESCO, 1998 and 2009), highlight a set of global higher education trends, summarized as follows:

- The expansion of enrolments.
- Escalating rates of graduate unemployment.
- Heightened emphasis on quality and relevance.
- Diversification of educational offerings.

- Financial constraints.
- And the aspect of internationalization.

These trends prompt countries worldwide to place greater emphasis on the quality of higher education. Consequently, the quality of higher education is progressively becoming a heightened requirement for various stakeholders invested in the outcomes of university education. These stakeholders encompass sector leaders, public authorities, students and their parents, the economic sector, and society at large.

In this context, this section primarily aims to provide a broad overview and fundamental information regarding quality assurance in higher education, including definitions, approach, and implementation. It will also endeavor to offer insights into three key questions:

- Why is quality assurance important in higher education?
- What constitutes a quality assurance system?
- What are the dimensions of the quality assurance approach in higher education?

Quality in Higher Education:

The concept of "quality" is described as a multidimensional, intricate, and evolving notion. Within the realm of higher education, various perspectives on quality

exist. Depending on the context, quality may be defined as alignment with objectives, adequacy of objectives, excellence, threshold or minimum benchmarks, continuous improvement, cost-effectiveness, and more (Bouزيد & Berrouche, 2012).

As per the UNESCO CEPES glossary, "quality" is always relative, bound to a specific time and place. Consequently, an absolute definition of quality does not, and cannot, exist (CEPES, UNESCO, 2004).

Therefore, the concept of quality sparks numerous controversies in higher education and is often wielded by stakeholders to legitimize their own vision or interests.

Quality Assurance:

The term "quality assurance" encompasses the strategies, procedures, actions, and attitudes necessary to ensure the maintenance and improvement of quality (Woodhouse, 1999).

Quality Assurance System:

According to Donald EKONG, a quality assurance system refers to the means adopted by a higher education institution to ensure, to itself and to stakeholders, that the necessary conditions for students to reach established standards have indeed been put in place (Bouزيد & Berrouche, 2012, p. 17).

2.2. Quality Approaches:

A quality assurance system can rely on one or more approaches, such as:

Quality Audit:

A quality audit verifies whether the stated (or implicit) intentions of an institution align with reality: When an institution sets objectives, it implicitly asserts that it will act accordingly, and the quality audit will determine the extent to which the institution adheres to its own objectives (Woodhouse, 1999). The quality audit is also considered a three-part process in which one verifies:

- If quality procedures are aligned with the stated objectives (relevance).
- If the activities actually conducted are in line with the project (compliance).
- If these activities are effective in relation to the stated objectives (efficacy).

Evaluation:

Evaluation can aim to enhance education by highlighting the improvements achieved. It can also focus on accountability, being considered an operation that leads to the assignment of a grade, expressed either as a number (e.g., 1 to 4), a letter (e.g., A to F), or an appraisal (excellent, good, satisfactory, for example). Finally, it can combine both aspects. This evaluation can be conducted either by a

government agency, a non-governmental association within the institutions themselves, or by an independent organization.

The essential difference between audit and evaluation lies in the level of results:

Audit provides a description of the survey results. Its purpose is not to evaluate quality and performance per se, but to ensure that mechanisms and procedures are appropriate and well implemented.

This method is used to assess the strengths and weaknesses of the quality assurance mechanism adopted by the system or higher education institution.

On the other hand, **evaluation** assigns a grade to these results.

However, the investigative process is the same, as in both cases, the aim is to verify results against objectives (Bouزيد & Berrouche, 2012).

Accreditation:

In accreditation, the aim is to verify if the institution deserves to attain a particular status. The question asked here is:

- Do you have a sufficient level (in all respects) for us to authorize you to operate? In other words, do you deserve approval? This means being classified in a specific category.

Accreditation generally leads to a decision of yes/no or admitted/rejected, but there can be variations, especially when the institution approaches the acceptable level.

2.3. The quality assurance mechanism:

The quality assurance mechanism is based on an evaluation process where the institution must carry out various assessments in the two main evaluation areas, which are:

Institutional Evaluation:

This refers to the evaluation of the governance of the institution, including the assessment of administrative and financial management. Here, priority may be given to the following five segments related to pedagogy:

- Pedagogical management.
- Information system.
- Student living environment.
- Resource centres (libraries, cyber spaces, multimedia).
- Employability issues.

Programmatic Evaluation:

Program evaluation encompasses all aspects pertaining to a specific field of study or curriculum. This includes the target demographic, the organization and content of the program, resource allocation

in terms of materials and staff, pedagogical methods, outcomes in the form of graduates and acquired competencies, employability, and more. Its ultimate aim is to provide a more comprehensive understanding of the teaching process and its end products, namely the diploma and the student.

Teaching evaluation, on the other hand, centres on the pedagogical activities of educators or the learning activities of students. Its primary objective is to enhance pedagogical quality and is chiefly conducted by and/or for teachers (Bouزيد & Berrouche, 2012).

3. Digitization of Higher Education:

It is undeniable that the acceleration of technological development has propelled various institutions to focus their efforts on transforming the information they hold, shifting from a traditional (paper-based) structure to a digital one. This reflects these institutions' response to the impact of technological advances on the storage, retrieval, and dissemination of information.

This orientation has found its place in the field of higher education, partly due to the institutional need to adapt to this new reality, and partly assuming that this field possesses the necessary human, cognitive, and technological capacities to effectively adopt this orientation.

3.1. Digitization:

The definition of "digitization" seems to be a movement towards a new model or paradigm, challenging the beliefs, systems, and practices on which organizational thinking is based. Definitions of digitization vary depending on the perspective from which it is considered. For instance, Larousse dictionary (2022) defines it from an economic and service perspective as a mechanism for transforming a company's financial and commercial services by increasingly resorting to information technologies.

Terry Kuny defines digitization as the process of transforming information sources in various forms (books, journals, sound recordings, still images) into a format readable by computers through the binary system (bits). It is also defined as a sophisticated process to convert a document, regardless of its type and medium, into a digital chain. This technical operation is accompanied by intellectual and documentary work aimed at organizing information for indexing, planning, and representing the content of the digital text (Boutarfa and Akabi, 2021, p 430).

These definitions suggest that the concept of digitization refers to the process of converting a tool, device, or profession into a digital code to replace it and make it more efficient. This digital shift began with the advent of Internet use, where postal mail was replaced by emails, trade shows by

online forums, and physical stores by e-commerce sites. Today, we are witnessing a broader and more efficient digitization that has become a natural trend, combining the emergence of the Internet and daily advancements in information technology. This trend extends to various fields, including higher education.

3.2. Digitization in Higher Education:

The digitization of higher education has become a necessity for the development of sector institutions and the improvement of their pedagogical and scientific performance. Faced with the increasing challenges related to this requirement, the term "digitization of higher education" raises questions regarding its definition due to its connection with information technologies on one hand, and with the concept and activities of higher education on the other.

Indeed, the concept of digitization in higher education goes beyond the mere technology used to manage the transformation of university activities from their traditional form to a new form. Thus, it surpasses the definition of digitization as the process of converting information sources from their traditional form to a digital form.

Educational digitization, according to Hassan Zeitoun, is defined as the study and ethical practice aimed at facilitating teaching and improving performance by

innovating in appropriate technological processes and resources, as well as their use and management. Similarly, digitization in the field of education encompasses all information and communication technologies used in the teaching and learning process to store, process, retrieve, and transfer information from one place to another.

Digital education is defined as an education that encompasses a set of applications and processes such as the use of the web, computers, smartphones, virtual classrooms via the Internet, as well as audio and video recordings, satellite broadcasting, interactive television, and compact discs (Mohamed Ibrahim, 2021, pp. 61-62).

Regarding the digitization of higher education, this term opens up new perspectives for universities by restructuring processes and improving the practices of university actors. Information and communication technologies in the university environment allow each institution to transform the professions and activities on which its existence is based, moving from well-established traditional models to more flexible ones. At the same time, this also opens up the possibility of engaging with the world by actively participating in the enrichment of global thought. For teachers and researchers, digitization allows them to break their isolation by facilitating the reorganization

of scientific research to make it more collaborative and ensuring communication between researchers from different geographical and cultural backgrounds, thereby contributing to the expansion of research networks and the dissemination of knowledge (Bernard Cerquiglini, 2017, p.11).

4. Rationale for Shifting Towards Digitization in Higher Education in Algeria:

In the context of the Algerian university sector's endeavor to align with various national and international directives aimed at enhancing the quality of academic activities at both the pedagogical and institutional levels, the shift towards digitization has become a necessity. This orientation signifies the anticipated contribution of this strategy towards the modernization and governance of the sector.

4.1. Contribution to the Modernization of Higher Education:

Since 2008, Algeria has adopted a progressive strategy known as "E-Algeria" aimed at digitizing public services and establishing the appropriate legal framework. This prompted various sectors, including higher education and scientific research, to adopt this approach and develop digital content for their various activities.

Indeed, digital transformation has become an effective means to promote and modernize the sector, given the notable spread of online education concepts and virtual universities. In this regard, the relevant ministry issued directive No. 56/20/SG-2019 emphasizing the necessity of using digital means in university management. University institutions have also turned towards establishing local digitization committees and supporting education, research, and training through digital platforms.

Furthermore, the preliminary draft of the Higher Education Orientation Law for the year 2020 proposes a legal framework allowing university institutions to embrace the technological era by incorporating it into their administrative and educational functions as an effective element of student education and training.

4.2. Enhancing Governance in Higher Education:

Many observers of higher education in Algeria emphasize that the sector grapples with issues of management efficiency and governance due to the use of traditional policies in handling its diverse resources. They insist on the need to integrate digital technology into most operations conducted by higher education, which constitutes an aspect of governance and management awareness (Gouati, 2011, p36).

The proposed bill also envisions the establishment of digital management resource centres and the development of a digital management plan at the level of higher education institutions.

4.3. A Means to Ensure Quality in Higher Education:

Since the shift of higher education in Algeria towards developing a quality assurance system in response to the current sectoral directions, stakeholders in the sector have been seeking methods suited to the nature of the university system, both at the institutional and pedagogical levels.

However, the implementation of the quality approach in Algeria faces multiple challenges, including the absence of a culture of evaluation and quality, the limited training of university actors in quality assurance procedures, and the constraints of resources allocated in this regard.

Nevertheless, the rapid technological advancement that has led higher education towards digitization opens a new perspective for revitalizing the quality assurance process by leveraging what digitization can offer in terms of enhancing teaching processes, evaluation, monitoring, and improving the quality of various university activities. This turns addressing the challenge of quality assurance in Algerian higher education into an objective justification and motivation for the shift

towards digitization. Starting from the role that this approach can play in assuring the quality of the educational process, moving to a modern education based on the wealth of knowledge, and then enhancing the image and position of the university globally, and to understand the repercussions of this modern technology (Yassin Aswad, 2021, p 186).

5. Experience of Algerian Universities in Quality Assurance:

Algerian authorities have recognized the necessity of establishing a quality assurance system, even though this process took some time. This political determination materialized in a reform aiming to elevate university education to higher standards, through the 2008 orientation law. Although it does not directly and comprehensively address this system, it, for the first time, opened up the possibility of establishing private higher education institutions and mandated their supervision and evaluation by reactivating the National Evaluation Council (NEC) (Bouزيد & Berrouche, 2012, p. 813).

Aligned with various stakeholders in the field of higher education regarding the imperative to develop a quality assurance mechanism, the initial steps of this orientation commenced through the implementation of a range of academic, organizational, and operational measures, thereby reflecting the primary features of

the Algerian experience in quality assurance. These measures encompass:

- The organization of several national and international conferences, notably the international conference held by the Ministry of Higher Education in collaboration with the World Bank (June 1-2, 2008), considered by higher education sector observers as the starting point for the construction and implementation of the quality assurance system.

- The establishment of national quality assurance bodies such as the National Committee for the Implementation of the Quality Assurance System in Higher Education (CIQASHE) and the National Evaluation Council (NEC).

- The development of a national quality assurance standards framework by CIQASHE (2016).

These preparatory measures were followed by a practical process, involving the initiation of a self-assessment covering various university institutions (2017).

The self-assessment operation covered the 07 domains of the national reference framework (education, research, governance, infrastructure, cooperation, relationship with the socio-economic environment, and university life). the reports highlight a significant number of limitations and deficiencies:

- Heterogeneity in professional practices related to quality management.

- Diversity in the collection and processing of data using various software (SPHYNX, SPSS, EXCELL, SAS...) at the institutional level.

- Difficulty in synthesizing aggregate results for utilization at the local, national, and international levels.

- Extended response times.

- Limited dissemination of results, which excludes some stakeholders.

- Absence of a quality assurance database allowing for information retrieval.

- Lack of a networking system facilitating the exchange and circulation of data within the network (both locally and nationally) for increased efficiency.

- Limited understanding of the project by newly appointed officials.

- Inadequacy of evaluation questionnaires for certain references.

- Misunderstanding of references due to their ambiguity.

- Limited involvement of students, alumni, and the socio-economic sector.

6. The DIGITAQ Project:

6.1. Project Overview:

This project is part of the Erasmus+ program and brings together nine (09) Algerian universities in addition to the Ministry of Higher Education: (University of Science and Technology of Oran, Oum El-Bouaghi, Ouargla, Biskra, University of Algiers 1, Setif 2, Bejaia, Mascara, and Guelma).

The European universities involved in this project are:

- University of Lyon 2 (Université de lumière lyon2 /ULL).

- Union of Mediterranean Universities (Union des Universités de la Méditerranée/UNIMED).

- Faculty of Sciences and Technology of the Nova University of Lisbon (Faculdade de ciencias e tecnologia da universidade Nova de Lisboa/FCT-UNL).

- French Movement for Quality (Mouvement français pour la qualité/MFQ).

- University of Liège in Belgium (Université de Liège Belgium/U-Liège).

The DIGITAQ project (Digital Capacity Building for Quality Assurance Management in Algerian Higher Education) will equip the quality assurance activity in Algeria with a networked information system, supported by a national database, capable of meeting all operational and even prospective needs.

The project is structured around five components (Preparation, Development, Quality Plan and Evaluation, Dissemination, Project Management).

6.2. objectives of DIGITAQ

The objectives of the DIGITAQ project are as follows:

- Establish a collaborative information system for supporting quality assurance activities through digitized data collection and analysis. This system will facilitate the monitoring of effectiveness through indicators.

- Provide the quality assurance activity in Algeria with a networked information system, utilizing a national database, capable of meeting all operational and prospective needs. The Assurance Quality platform allows stakeholders, regardless of their location, to access an unprecedented amount of information.

- Offer methodological and systemic support for the implementation and sustainability of quality assurance practices by various stakeholders. DIGITAQ aims to establish communication channels to strengthen links between different stakeholders, ensuring the management and achievement of local objectives for each institution project in alignment with a national vision and strategy.

- Serve as a platform for digitizing the information system related to quality assurance management. Specific objectives include:

- Facilitate the management of quality assurance processes at the three levels (Management, Realization, and Support) in the seven domains defined in the national reference framework by digitalizing them. This digitalization will also simplify process construction and provide employees with more agile activity management and better organization.

- Support the construction of the institution's project by defining workflows in the Planning phase of the Deming cycle, aiming to represent all tasks, steps, and resources involved in this project.

- Build measurement indicators and dashboards from the generated data mass.

- Enable quick identification of decisions to be made and improvements to be implemented by rapidly visualizing the Key Performance Indicators (KPIs) to be monitored and making them available to teams and/or the governance authority. This addresses the constraints of analyzing and cross-referencing figures in the absence of digitization.

- Strengthen the internal evaluation process of the quality approach within each institution and the external evaluation conducted by the Ministry of Higher Education and Scientific Research through its Quality Agency.

- Establish a national network dedicated to quality assurance management in higher education to harmonize practices and engage various stakeholders (managers, teachers, students, technical and administrative staff, employers, etc.) in the quality approach.

7. The Impact of the DIGITAQ Project on the Visibility of Algerian Universities:

The DIGITAQ project has had a significant impact on the visibility of Algerian universities. Thanks to this initiative, higher education institutions in Algeria have been able to enhance their digital capabilities and improve their quality assurance processes. Here are some key points regarding the impact of the DIGITAQ project on the visibility of Algerian universities:

7.1. Enhancement of Higher Education Quality:

By strengthening the quality assurance system, the DIGITAQ project has contributed to the overall improvement of the quality of higher education in Algeria. This has had a positive effect on the reputation of the country's universities.

7.2. Increased International Competitiveness:

The improvements brought about by the DIGITAQ project have allowed Algerian universities to position themselves more advantageously on the international stage. They have become more competitive in the global context of higher education.

7.3. Strengthening international collaboration:

The participation of European universities in the project has promoted exchanges and cooperation between Algerian and European institutions. This has contributed to the openness and internationalization of Algerian universities.

7.4. Enhanced Visibility through Digitization:

The transition to more advanced digital systems has allowed Algerian universities to gain visibility. This includes the establishment of online platforms, digital educational resources, and other technological tools that have facilitated the dissemination and accessibility of higher education.

7.5. Recognition of Achievements by Peers and Accreditation Bodies:

The improvements brought about by the DIGITAQ project have been recognized and validated by academic peers as well as national and international accreditation

bodies. This has strengthened the credibility of Algerian universities.

7.6. Attraction of Foreign Students and Researchers:

Increased visibility and improved reputation have attracted the attention of foreign students and researchers to Algerian universities. This has contributed to the diversification and enrichment of the academic community.

8. CONCLUSION:

In conclusion, the DIGITAQ project represents a significant advancement in the field of higher education in Algeria. By combining the principles of quality assurance with the opportunities offered by digitization, this project has strengthened the quality of higher education and increased the competitiveness of Algerian universities on the international stage.

The establishment of a federative and collaborative information system has facilitated the collection and analysis of data, providing a clear and precise view of the performance of institutions. Furthermore, the DIGITAQ platform has promoted communication and cooperation among various stakeholders, creating an environment conducive to innovation and continuous improvement.

The impact of the project is also evident in the attraction of foreign students and researchers, thereby contributing to the

diversification and enrichment of the academic community in Algeria. Additionally, the recognition of achievements by peers and accreditation bodies confirms the relevance and effectiveness of the efforts deployed.

In summary, the DIGITAQ project has not only modernized higher education in Algeria but has also strengthened the position of the country's universities in the international context. It represents a crucial step towards achieving the expected standards of excellence and relevance in the landscape of higher education. This project, with its innovative vision and effective implementation, serves as a model to follow for future initiatives aiming to improve the quality of higher education worldwide.

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