IInTÆ
Universidad Nacional de Catamarca - Facultad de Humanidades
Instituto de Investigación en Teorías del Arte y Estética
Revista Rigel – ISSN 2525-1945.

Digital transformation at the Algerian University as a philosophy of renewal and keeping pace with scientific progress

Dr. Abdelhafid Zine Laabidine

University of Djillali Bounaama – Khemis Miliana, Algeria, A.ZINE-AABIDINE@univ-dbkm.dz

Received: 07 /06/ 2026 Accepted: 15 /07/ 2026 Published: 02 /09/2026

Abstract:

Universities in the world today are seeking to rebuild their academic and management models in light of the accelerating digital transformation. Digitization is not only a technical tool, but a comprehensive philosophy of thinking and development, touching all dimensions of the university institution: education, scientific research, governance, and community service.

This paper focuses on the need for national universities to adopt digital transformation as a strategic and philosophical choice aimed at achieving quality, and emphasizes that digital transformation is not limited to the use of technology, but includes changing the institutional culture, reformulating professor-student-management relations, and adopting data-driven educational curricula and artificial intelligence.

Global universities have become smart universities, relying on digital analysis and interactive e-learning, making them more efficient. Hence, the delay of national universities in adopting this digital philosophy leads to a growing knowledge gap between them and global higher education institutions, through this

- What is digital transformation at the university? What are its requirements?
- What are the efforts of the Algerian University in keeping pace with digital transformation?

What are the obstacles that make the process of digital transformation difficult?

KEYWORDS: Digital transformation, university, resistance to change, digital platforms

INTRODUCTION:

The contemporary world is undergoing a radical transformation in various spheres of life as a result of the accelerating digital revolution, which has brought about a new reality based on the knowledge economy, artificial intelligence, e-learning, and big data. In this context, universities are no longer isolated from these transformations, as they are more than ever required to reconsider their functions and roles in line with the requirements of the digital age. Hence, the concept of digital transformation at the university has emerged as a strategic option and a comprehensive philosophy of renewal that seeks to modernize higher education and improve its quality and outputs.

The digital transformation at the university is not limited to introducing technology into the educational or administrative process, but goes beyond that to being a process of cultural and intellectual transformation that reshapes the relationship between human, knowledge and technology. The modern digital university is no longer an institution for indoctrination, but an interactive space based on artificial intelligence, open educational platforms, and e-governance, making it more efficient and responsive to global challenges. However, this transformation, although necessary, faces a number of obstacles and resistances that are mainly related to the culture of the actors within the university, the weakness of digital awareness, the absence of continuous training, as well as technical and organizational obstacles.

This study seeks to address the topic of digital transformation at the university from a philosophical and strategic perspective, highlighting its various dimensions and analyzing the factors that affect its success or faltering. It analyzes the phenomenon of resistance to change as one of the main obstacles to embodying digital transformation in the university reality. It also addresses the requirements of this transformation from digital infrastructure, human rehabilitation, and integrated administrative and technical planning.

The study also seeks to highlight the pros and cons of digital transformation, through an objective balance between the opportunities it offers and the risks that may accompany it, in addition to anticipating the future prospects of this path in the light of successful global experiences. On the practical side, the paper pays special attention to the efforts made by the Algerian state in the field of university digitization, through the establishment of educational platforms, electronic portals, and digital projects that seek to make the Algerian university more open and interactive with its national and global environment.

Based on the above, this study stems from the conviction that digital transformation is not just a technical orientation, but a civilizational and philosophical project that redraws the features of the modern university. Hence, the central problem that the paper tries to answer is:

What is meant by digital transformation at the university?

- How can the National University adopt digital transformation as a philosophy for development and keeping pace with global scientific progress, while overcoming resistance to change and ensuring the sustainability of this path?

Defining Digital Transformation

There are many definitions addressed by various thinkers and researchers, perhaps the most prominent of which are:

"Pursuing the organization's strategy and developing innovative and flexible business and operating models by investing in technologies, developing talent, reorganizing operations, and managing change, creating value and new experiences for customers and employees. (Ammar Zaidan, DS, p. 03)

"The process of companies moving to a business model that relies on digital technologies to innovate products and services, providing new channels of revenue and imposing them increases the value of their product.

Digital transformation is a set of digital actions and digital innovation aimed at developing existing products and innovating new products through information technology in business strategy.(Khaddawaj Rabeeh, d.c., p. 03)

Digital Transformation: Although digitalization is a first step in the digital transformation journey, digital transformation goes beyond that to encompass a much broader scope. It refers to an overarching change process that affects an organization's organizational culture, where digital technology is integrated into all aspects of business and services. Digital transformation aims to radically transform how we operate and deliver services, fostering innovation and efficiency and completely reshaping operational processes and models. (Bin Ahmed, 2025, p. 503)

Fourth: The Importance of Digital Transformation

- Improving efficiency by contributing to digital transformation in accelerating administrative and operational processes, reducing errors, and improving the quality of services provided. It also simplifies procedures, making it easier for the public to access services faster and more effectively .

Enhancing competitiveness enables organizations that embrace digital transformation to offer innovative and creative services that go beyond traditional methods, giving them a competitive advantage in markets and enhancing their ability to create new opportunities.

Improving customer experience: Digital transformation allows organizations to collect and analyze data accurately, which helps them better understand customer needs, reflected in the delivery of improved services and an integrated experience that effectively meets customer expectations.

Transparency Digital transformation provides tools that enable organizations to monitor performance in real time, which enhances transparency and increases the clarity of operations. It also facilitates access to information and ensures that procedures are clear to all parties involved.

Reduce costs: Digital transformation helps reduce operational costs and effort by improving efficiency and streamlining operations, enabling organizations to save and invest resources in other areas.

Achieving sustainable development: Digital transformation supports the improvement of vital sectors such as education, health, and energy through innovative technologies that reduce negative environmental impact. It also contributes to building a smart and sustainable society that promotes inclusive development.(Ibn Ahmad and Ibn Ahmad, 2025, p. 505)

Characteristics of digital transformation

This trait is called the degree to which participants in the communication process have an impact on the roles of others and can exchange them.

. Asynchronous: The ability to send and receive messages at a time that is convenient for the individual user , and does not require all participants to use the system at the same time.

Mobility New means of communication tend to be small in size with the possibility of using them to communicate from anywhere else while the user is moving.

. Prevalence: It means the systematic spread of the system of new means of communication around the world and within each layer of society, and each means appears at first as a luxury and then turns into a necessity .

. Cosmicity: The new basic environment of means of communication is an international global environment so that information can follow complex paths that complicate the paths through which capital flows electronically across international borders, gene and back from the farthest place on earth to below.

1.4 Dimensions of Digital Transformation:

The dimensions of digital transformation are manifested in :

- The use of digital technologies - technology. This dimension includes the extent of the organization's ability to use and exploit information technology and its technological ambition in the future.

Changes in value creation relate to the extent to which digital transformation strategies affect companies' value chains and to the extent to which new digital activities deviate from classic core businesses, as these deviations provide opportunities for expansion and enrichment of the current range of products and services.

- Structural changes that indicate differences in the organizational settings of institutions, especially with regard to the placement of new digital activities within the structures of institutions and administrative units in order to provide an appropriate basis for new processes.

- Financial aspects, including the institution's ability to obtain financial resources due to the decline of the core business, which represents a major source of funding for the requirements of digital transformation, being the engine and binding force to bring about digital transformation.Bahash, 2024, p . 74)

2-1 Resistance to organizational change for individuals:

Change management: This term is one of the concepts that emerged and developed during the last two decades of the twentieth century, and it means "the process through which the organization's leadership adopts a set of values, knowledge and techniques... In exchange for abandoning other values, knowledge or techniques, change management comes to express how to use the best methods economically and effectively to bring about change and its stages in order to achieve the goals of the organization.Titila and Ashoury, DS, pp.218-219)

Resistance to change is one of the phenomena that organizations are exposed to in every attempt to implement change, as change is often seen as a threat to stability, so we find that most individuals oppose organizational change.

2.2 Definition of resistance to change:

Resistance to change can be defined as: negative reactions by individuals because they seek to maintain the comfortable status quo to which they are accustomed and because they see that

change will deprive them of some of the advantages they have gained and expected.(Kaddoush , 2025, p. 244)

Resistance to change: The process of rejecting change by conducting processes that are contradictory to the processes of change in the organization. Yahyaoui and Ismail, 2020, p. 113)

2-3 Reasons for Resistance to Change:

Individual resistance to the process of change, often as a result of concerns about change.

Resistance to change in organizational elements is high, and this is the result of uncertainty about the results of the expected change.

It indicates here that resistance to change can take many forms and attitudes, ranging from just negative attitudes to ineffective behavior and lack of cooperation, depending on the situation itself.

Resistance to change includes behaviors that may disrupt or stop the process of change altogether.

It is one of the types of resistance: overt resistance, and other indirect resistance, which may appear in the form of conflicts, absences, or poor productivity.

Organizational Resistance to Change

Employees are not convinced of the feasibility of change, especially if the change is related to improving performance or efficiency.

- The emergence of elements of resistance by workers affected by change.

Failure of individuals to know the goals of change, especially if the change violates the old values they embrace.

The ambiguity of change, its concepts or objectives, strategies and methods.

- Slow results resulting from change, especially for multiple changes, where individuals see that the results are useless.

- Lack of clarity of the roles of the main officials responsible for the change process.

Digital Services Quality

- Credibility(reliability): It means the ability to commit to providing services on time to beneficiaries and in the right ways, with a high degree of accuracy.

- Response: It indicates the speed in providing the service and the rapid response to beneficiaries' inquiries, requests and complaints. It is also the amount of clear instructions, evidence and guidance provided to the beneficiary when using digital services to search for information, such as icons to help the website. The response is related to the ability, desire and willingness of service providers to be permanently in customer service and their ability to perform the service for them when they need it.

Additional features and general appearance: These include the tangible physical aspects of the services, such as buildings, devices, equipment and the appearance of the employees. Tools and means of communication with customers, such as technology used in providing the service, and other physical facilities used in the production and provision of digital service

Ease of use: It refers to the extent of interactivity with the website, dealing with digital platforms, easy mobility and good organization, as the ease of completing their tasks depends on the speed of research, organization and general design

- Keeping abreast: It means providing the beneficiaries with the necessary information, treating them well and being able to instill a spirit of safety and confidence in the hearts of the beneficiaries of the service. The guarantee means knowledge and good treatment of users "service providers" and their ability to spread or spread the spirit of trust and honesty, and also includes oral and written communications between service providers and recipients. The guarantee includes a set of elements, including: trust in the service provider, qualification and efficiency of employees, and the extent to which they enjoy civility and kindness.

Empathy: It means understanding the needs of the beneficiary and notifying them of their personal attention. It indicates the amount of assistance that beneficiaries receive by the organization's staff while using digital services, and answering beneficiary inquiries via websites and lines of communication. Empathy refers to the degree of care and concern for the beneficiary in particular, and attention to his problems and work to find solutions to them in high humanitarian ways.(Salmi et al., 2024, pp. 52-53)

4. The efforts of the Algerian University in digitization:

The Ministry of Higher Education and Scientific Research in Algeria has established many electronic platforms and portals in order to facilitate the educational-learning process for students, faculty members and workers as a whole, within the framework of digitizing the university to be an independent unit technically, financially and administratively to facilitate its work and facilitate its digital transformation, which makes the universities of the country digitally integrated with each other. This falls within the framework of supporting information centers for higher education and developing mechanisms that ensure integration between all applications of the information system for communication to the university, namely:

4-1- Distance education project: Distance education occupies an important place in the educational system in the higher education sector. It is one of the modern teaching methods that is based on the presence of the learner in a place different from the source that is the book, the teacher, or even the group of students.

This project aims to provide a flexible learning environment, including strategies that rely on the use of modern teaching methods. It also contributes to supporting decisions, speeding up the completion of administrative transactions and optimizing the infrastructure environment associated with the Internet for the university institution, as it provides easy communication between the parties to the educational process through forums and e-mail without a barrier of time and place.Barrada et al., 2022, p. 313)

4-2 Moodle Platform: As for the Moodle platform, its first version appeared in 2020, it is the virtual environment for learning, and it is a free and widely used open platform. It includes a virtual community that includes members and users of the site. Through the virtual community, it is possible to exchange views and ideas, engage in scientific discussions, and send messages between members and users.

Many educational activities can be included in the Moodle platform that allow, on the one hand, to evaluate the gains, and, on the other hand, allow students to consult online with each other and their professors on the topics at hand, as well as download educational content. The Moodle platform includes 14 activities (Bashar Ismail, Readers (2020)) that can be used to make the distance education process a success. They are interactive activities in a web-based learning environment.Harhad, 2023, p.13)

4-3- The National Portal of Algerian Journals (ASJP)

It is a digital platform dedicated to the publication of scientific articles. It was established in 2018. Since its establishment, it has included hundreds of journals issued by Algerian scientific bodies (universities, high schools, research centers, research laboratories). It is managed and developed "under the supervision of the Center for Research in Scientific and Technical Media (Cerist), based in the city of Ben Aknoun in Algiers, and the city of Batna. The platform aims to enable researchers wishing to publish their research and scientific articles, while choosing the appropriate scientific journal for their scientific and research aspirations." It is not responsible for any ethical problem.Soltani, 2022, p. 195)

4-4- Progress floor: It is an electronic floor designed by CERIST that was implemented in 2018-2019 and can be accessed using Arabic or French . In order to register students across all Algerian universities to participate in this master's or doctoral competition, on the one hand, and on the other hand, university professors who study in all universities of the country must access the portal and put students' points, whether in lectures or the application of the standards they study.Tatila and Ashoury, DS, pp.220-221)

Other Platforms

There are many electronic platforms created by the Ministry, including but not limited to:

- Management and follow-up platform for foreign students.

- The platform for managing and following up the training abroad, the automated processing of the application according to the opinion of the Scientific Council.

- Registration platform for foreign students at the Algerian University for master's and doctoral courses.

- The digital platform for renewing scholarships for students.

- Training management and control platform towards the outside.

- A platform for managing and following up the joint supervision of theses.

- Monitoring platform for international agreements.

5- Challenges facing digital transformation at the Algerian University:

Despite the efforts exerted by the Guardian Ministry to promote the traditional educational system to a smart educational system, it faces many challenges, which can be summarized as follows:

- Technical challenges: One of the most challenges facing digital transformation is the limited capacity of educational institutions to establish large networks and provide large numbers of devices and equipment in addition to updating them, especially since information and communication technologies are witnessing multiple developments and transformations in a rapid and continuous manner, which makes it difficult to acquire various such technologies. In terms of software, the lack of e-learning applications in Arabic is a major challenge in addition to their multiplicity and the need for similarity among them is an obstacle to choosing the appropriate software. Hence, the concerned ministries, especially the Ministry of Education and the Ministry of Communication and Information Technologies, had to coordinate among themselves in order to produce local software that takes into account the various specificities of teaching and learning.
- The legislative environment to ensure the integrity of digital transformation, laws and instructions must be adapted in a way that ensures the dynamism of the educational system, to suit the fast-paced modern developments.
- Human resources resistant to change: The movement of change and the trend towards digital transformation pose a challenge for many who are accustomed to the traditional system, and therefore this trend will face many resistance against this system, and therefore the policy of awareness, motivation and firmness is necessary in order to accept this change.
- Lack of funding: Investment in the field of education is one of the areas that do not attract companies and owners of funds to invest in and therefore lack of funding for this sector in addition to the cost of operation and maintenance .
- Lack of digital competencies: The lack of digital competencies among some faculty members and administrative cadres is a major challenge to the digital transformation of educational institutions. This lack is reflected in the duration of aspects, including:
- Difficulty using technologies: Inability to develop digital content, difficulty integrating into the digital environment, age: Older professors are often less familiar with modern technologies. etc.
- Infrastructure: Weak digital infrastructure in some areas.(Bolguas et al., 2020, pp. 238-239)

In addition:

- Weak infrastructure of the Algerian University and its lack of readiness to receive digital transformation technology in terms of:
- The obsolete computers available at the university level and those available from them are still working with old applications and programs.
- In addition, human resources were not prepared to deal with this new technology due to the lack of framing and good training for them.
- The lack and weakness of the Internet flow at the university level due to the weakness of the communication structure.

- Weak financial support by the guardians and directives to implement the digitization project at the university level.
- In addition to the lack of financial allocations for the training of human resources to qualify them and provide them with the various skills, experience and knowledge necessary to run this technology.Bahash, 2024, p. 683)

PLUS:

- Economic factors include the cost and affordability of using modern technology, as well as the level of overall income that affects the ability of individuals and institutions to invest in digital solutions.
- Administrative and regulatory factors These factors are related to the strength of business institutions and the availability of necessary protection for consumers, as well as the existence of a clear legal framework and supportive financial institutions that contribute to facilitating the adoption of digital technology.
- Infrastructure factors include the level of development of communication networks and the availability of electricity infrastructure in addition to the general technological level that represents the basis of digital transformation.
- Factors related to the nature of the market The nature of the market includes factors such as the fragmentation of the market, the size of business enterprises and the spread of the informal economy, which affect the ability of institutions to adopt digital transformation.
- Cultural factors These factors are related to the level of education, the illiteracy rate, the language used, and the availability of appropriate digital content on the Internet. It also includes confidence in the digital economy and e-business, which are necessary to encourage individuals and institutions to engage in digital transformation.(Ibn Ahmad and Ibn Ahmad, 2025, p. 507)

Future Prospects

The Guardian Ministry aspires to achieve many strategies in the future to transform the Algerian University into a smart university, the most prominent of which are the following:

- Acquiring digital competencies and this requires developing the skills of faculty members and students in the field of digital technology.
- Successful and secure base structures by providing a strong and secure digital infrastructure while ensuring its sustainability and permanence.
- Digitization as a pillar of training and visualization by using digital technology to improve the quality of teaching and learning and enhance student participation, raise the level of motivation and increase the visibility and effectiveness of communication inside and outside the institution.
- Scientific research that is visible and generates value by using digital technology to enhance scientific research and widely disseminate the results of scientific research, in addition to transforming scientific research into products and services that called for economic value
- Configuration patterns and multimedia supports: Developing diverse learning styles that suit the needs of the student with the use of multimedia in teaching and learning

- Information system Developing an effective information system to integrate all data related to teaching and learning and improve the efficiency of the organization's management.
- Visibility and attractiveness of the institution and its national and international relations.
- These are the most important horizons lying on me : which the University of Algeria seeks to analyze, which includes the development of the answer to education, research and innovation. (Bulgawas and Jaffal, 2020 , pp.239-240)

Conclusion:

The digital transformation of higher education institutions is no longer a luxury option, but a strategic necessity dictated by the accelerating transformations of the knowledge society and the AI economy. The contemporary university is no longer a closed space for indoctrination, but has become an open knowledge system that relies on technology and data as tools for the renewal of thought and practice. In this sense, digital transformation is seen as a comprehensive philosophy of institutional modernization aimed at rebuilding the physical and intangible structure of the university on the foundations of innovation, flexibility, and integration between the human and technical dimensions.

The paper highlighted that the success of this transformation is linked to the university's awareness of the importance of digitization as a lever for scientific development, and its ability to manage change and confront manifestations of internal resistance that may hinder the transformation process. Change is not only achieved by providing technical means, it requires a deep cultural transformation that reshapes the values of actors within the university and instills in them entrepreneurship, self-learning and innovation. In this context, conscious and effective university leadership is the cornerstone of guiding this path and ensuring its sustainability.

The paper also stressed that digital transformation carries with it vast opportunities for development by improving the quality of education, facilitating access to knowledge, enhancing transparency and efficiency in management, as well as real challenges related to cybersecurity, digital disparity, and lack of technical competencies. However, overcoming these obstacles requires a holistic approach that integrates technical, human and organizational aspects, and is based on long-term strategic planning.

Within the national framework, the Algerian state is making significant efforts in the field of university digital transformation through the development of educational platforms and electronic portals, the generalization of university digital identity, and the linking of higher education institutions with research communication networks. These steps constitute the first

building blocks in building a digital university system that responds to the requirements of the times and contributes to improving the quality of education and scientific research.

The future of the National University depends on its ability to own the tools of digitization and direct them towards achieving its educational, scientific and societal mission, within a philosophical vision that makes the human being the focus of the digital process and not its subordinate. Thus, digital transformation is not reduced to its technical dimension, but represents a comprehensive civilizational project that seeks to reformulate the relationship between knowledge, technology and society.

Accordingly, it can be asserted that a university that adopts digital transformation as an intellectual and organizational philosophy will be better able to contribute to the making of the future, while a university that fails to catch up with digitization will find itself on the margins of the new global university system. Hence, the biggest challenge for national universities remains the transition from the technical use of technology to the philosophical awareness of it, as a tool for cognitive liberation, sustainable development and building a knowledge society.

Bibliography:

- Bahach Wafa(2024), Digital Transformation and its Role in the Modernization of Higher Education Institutions, Algerian Journal of Rights and Political Science, Volume 09, Issue 02, pp. 670-682.

- Brada Abdel Razzaq and Sally Murad and Yousri(2022), Digital Transformation in the Algerian University Center, Journal of Mediterranean Thought, Volume 11, Issue 02, pp.300-320.

- Bin Ahmed Fatima Al-Zahraa and Bin Ahmed Nadia(2025), Digital Transformation in Algeria: Reality and Challenges – Case Study – Volume 15, Issue 01, P.501-512.

Bulgawas Habiba and Jaffal Saliha(2020), Mechanisms of Digital Transformation at the Algerian University: Towards a Smart University

- Sarah and Ashoury Habiba(DS), Managing change in higher education institutions: between inevitability and disability, Al-Qabas Journal of Psychological and Social Studies, among the students of the first year of the university master's program Progress used as a model, Al-Qabas Journal of Psychological and Social Studies No. 04, pp. 216-229.

- Harhar Kohina (2023),Distance Education by Employing Moodle Platform, Field Study at the Higher School of Applied Sciences in Algeria, Afkar and Afaq Journal, Volume 11, Issue 02, pp.09-28.

- Zidane Ammar (DS), Digital transformation as a pillar for the modernization of the higher education sector in the Arab countries (Algeria as a model), a scientific paper presented at the Quality of Services Forum in light of digital transformation and e-governance in Algerian institutions, stakes and challenges of evaluating reality and foresight of reality, and Ouargla.

Soltani Farouk (2022), The Effectiveness of Digital Platforms in Activating the Culture of Scientific Publishing and Broadening the Readability of Research, A Comparative Reading between the

National Platform for Journals and the Jordanian Platform for Scientific Journals, Volume 7, Issue 06, pp. 193-217.

- Qudush Nabil (2025), Resisting Remote Change in the Higher Education Sector among Professors of the Faculty of Economic Sciences - Msila University Distance Education Moodle Model - Volume 12, Issue 1, pp. 240-261.

- Yahya Elham and Nisreen Ismail(), Resisting organizational change as a challenge to implementing the quality assurance system for higher education from the point of view of administrators at the Faculty of Economic, Commercial and Management Sciences, University of Batna 1, Volume 3, Issue 1, pp. 106-129.

"Higher National School of Artificial Intelligence Model" "Higher National School of Artificial Intelligence Model", Journal of Social Studies and Research, Volume 12- Issue 4, pp.229-241.

. Khaddawj Rabeeh and Shawki Qattan(), The Reality of Applying Digital Transformation in University Institutions, The Algerian Experience as a Model, A Scientific Paper Presented at the Forum on Quality of Services in Light of Digital Transformation and Electronic Governance in Algerian Institutions: Issues and Challenges of Assessing Reality and Foresight of Reality, and Ouargla,