

An Analytical Review of Algeria's E-Governance Efforts in Higher Education and Scientific Research

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ABSTRACT

The Digital Platforms Portal represents a strategic milestone in the digital transformation of Algeria's higher education and scientific research sector. It offers an integrated suite of services aimed at supporting students, academic programs, scientific research, and modern administrative governance. These platforms have significantly enhanced user experience, streamlined administrative procedures, and reinforced institutional transparency, while facilitating the effective monitoring of research programs and fostering national and international collaboration. This analytical review highlights the need to unify institutional databases, regularly update digital content, and promote the active utilization of these platforms to ensure optimal benefit. It further underscores the critical importance of building human capacity and adopting digital performance indicators to assess the impact of these platforms and drive continuous improvement. Overall, the portal constitutes a cornerstone tool for implementing Algeria's National Digitization Program and modernizing the higher education and scientific research ecosystem in alignment with national development priorities and global digital trends.

Keywords: performance, modernizing, underscores

Introduction

In light of the rapid global transformations driven by the digital revolution and the growing demand for sound governance, e-governance is no longer a luxury but a strategic imperative. Its implementation has become essential to enhancing institutional efficiency, effectiveness, and performance. Consequently, the higher education sector is now compelled to embrace this shift and keep pace with these evolving dynamics. This urgency stems from the sector's critical role in human capital development, the increasing volume and diversity of services it provides, the multiplicity of stakeholders involved, and the expanding networks of communication and coordination among universities, the ministry, and research bodies. Adopting e-governance mechanisms in this context is not merely a technological upgrade; it constitutes a fundamental approach to renewing administrative management models, improving decision-making quality, strengthening transparency and oversight, and ensuring the optimal use of resources.

Studying e-governance in higher education is thus of particular importance, as it represents an intersection between the demands of modern administration and digital transformation. It contributes to enhancing institutional performance by streamlining procedures, digitizing pedagogical and administrative services, and facilitating access to various electronic platforms. Furthermore, it broadens stakeholder participation—students, faculty, and administrators alike—through more flexible and effective communication channels. The literature indicates that implementing e-governance significantly improves institutional performance, reduces time and costs, and increases

satisfaction among students, academic staff, and administrators. For instance, the study by Wail Shafi Alshammari et al. (Alshammari & et all, 2025, p. 169) revealed that all dimensions of e-government services exert a statistically strong positive effect on institutional performance, with information quality, interactivity, and web functionality emerging as the most influential factors.

The Algerian university system has not remained aloof from these global shifts. On the contrary, it has undertaken comprehensive efforts to modernize the higher education and scientific research ecosystem through initiatives led by the Ministry of Higher Education and Scientific Research and the Research Center for Scientific and Technical Information (CERIST). The Ministry has launched a suite of digital platforms aimed at improving university governance, simplifying administrative services, supporting students' academic and social trajectories, and enhancing the monitoring of scientific research and innovation. Concurrently, CERIST plays a pivotal role in providing the scientific and informational infrastructure by developing national portals for documentation, scholarly publishing, and access to electronic resources—thereby empowering researchers and elevating the quality of scientific output. Collectively, these efforts reflect a strategic orientation toward building a digital university, advancing the knowledge economy, and aligning higher education with national development goals and digital transformation agendas.

Accordingly, this study seeks to analyze the state of e-governance in Algerian higher education and review the key digital initiatives implemented by the Ministry of Higher Education and Scientific Research. The overarching aim is to provide a comprehensive understanding of e-governance mechanisms and how they can be effectively leveraged to serve the objectives of the Algerian university system.

Research Problem

The Ministry of Higher Education and Scientific Research is striving to achieve a digital transformation aligned with global advancements by implementing e-governance and modernizing administrative processes. In the Algerian context, e-governance in higher education and scientific research represents a strategic option for renewing university management, enhancing educational quality, supporting scientific innovation, and institutionalizing principles of transparency and efficiency within the academic ecosystem.

Based on the above, the following central question is posed:
What are the Algerian efforts in e-governance for the higher education and scientific research sector?

This main question is supported by the following sub-questions:

- How do digital portals contribute to access to scientific knowledge, research information management, and transparency in Algerian universities?
- Does the integration of digital platforms with training, research, and international cooperation enhance the alignment of higher education with labor market demands and support the implementation of the National Digitization Program?

Research Hypotheses

1. Digital portals contribute to improving access to scientific knowledge, managing research information, and enhancing transparency in Algerian universities.
2. The integration of digital platforms with training, research, and international cooperation strengthens the alignment of higher education with labor market needs and supports the implementation of Algeria's National Digitization Program.

Research Objectives

This study aims to achieve the following objectives:

- Provide an in-depth understanding of the mechanisms driving the shift toward e-governance in higher education and scientific research.
- Examine the contribution of digital portals to access to scientific knowledge, research information management, and institutional transparency in Algerian universities.
- Assess the significance of integrating digital platforms with training, research, and international collaboration in aligning higher education with labor market requirements and advancing the National Digitization Program.

Significance of the Study

The study of Algeria’s e-governance efforts in higher education and scientific research holds considerable importance, as e-governance contributes to:

- Delivering faster and more effective services—such as pedagogical platforms, online services, and electronic article submission—thereby enhancing stakeholder satisfaction and improving university life quality.
- Strengthening transparency by making information widely accessible, enabling real-time tracking of administrative processes, and openly publishing decisions, which fosters trust among students, faculty, and administrators.
- Aligning the higher education and research sector with international standards and enhancing the competitiveness of Algerian universities.
- Establishing communication channels among all stakeholders in the higher education and research ecosystem, as well as with national institutions, thereby promoting integration and coherence.

Review of Previous Studies

Author(s)	Title	Methodology	Key Findings
Wail Shafi Alshammari et al. (2025)	<i>Impact of E-government Institutional Performance: Fostering Sustainable Higher Educational Practices, European Journal of Sustainable Development, 14(1)</i>	Examined e-government service quality using 10 institutional performance items and 21 E-GOVQUAL-based questions; data analyzed via Smart PLS software.	All e-government dimensions had a statistically strong positive impact on institutional performance. Information quality, interactivity, and web functionality were the strongest predictors. Optimizing e-services enhances efficiency, reduces transaction time, and boosts user satisfaction.
Markus Yohanna Kamale et al.	<i>E-governance Adoption and Service Delivery in Selected Tertiary Institutions in</i>	Survey research with 400 respondents from two universities; mixed methods (questionnaires,	E-governance significantly improved administrative efficiency and service delivery.

(2025)	<i>Adamawa State, Nigeria (2010–2024), Futurity of Social Sciences</i> , 3(1)	interviews, observations); stratified random sampling; data analyzed using regression at $\alpha=0.05$.	
Cristian García-Estrella et al. (2025)	<i>Digital Governance Model for Peruvian University Academic Management, Journal of Management World</i> , 1	Non-probabilistic sample of 97 faculty members from a population of 537.	Digital governance notably enhanced academic management—especially in interoperability and data governance—though digital security and service delivery were identified as weak points. The proposed model is replicable and supports quality standards and digital inclusion.
Comfort N. Agbor et al. (2024)	<i>Impact of Electronic-Governance on Students’ Management in Environmental Education Department, University of Calabar, Mediterranean Journal of Social Sciences</i> , 15(4)	Structured questionnaire (IEGSMQ) administered to 400 students; data analyzed via linear regression.	Significant relationships were found between: (1) ICT infrastructure quality and student management, (2) student ICT utilization and e-governance effectiveness, and (3) ICT staff quality and e-governance outcomes. The university possesses robust ICT infrastructure and skilled personnel.
Hamdi Abdulkarim Al-Ruwathi (2023)	<i>An Analysis of E-Governance Dimensions in IT Administrations of Saudi Universities: Implementation and Impact on User Satisfaction, Journal of the Faculty of Education</i> , 89	Survey of 628 faculty members from four universities; 24-item instrument refined via exploratory factor analysis into four dimensions: performance measurement, added value, resource and risk management, and strategic alignment.	Strategic alignment was the most implemented dimension but had the weakest positive impact. Performance measurement was least implemented but second most impactful. Added value was moderately implemented yet had the strongest positive effect. A multiple regression model explained 39.2 of variance in user satisfaction.

Source: Prepared by the authors.

Critical Comparative Analysis of Previous Studies

Similarities Across Studies

- **Consensus on the positive impact of e-governance:** All studies—conducted in diverse geographical contexts (Saudi Arabia, Nigeria, Peru, Europe)—confirm that e-governance significantly

enhances institutional performance, administrative efficiency, service quality, transaction speed, and user satisfaction.

- **Methodological approach:** Most relied on descriptive-analytical or survey designs.
- **Data collection tools:** Questionnaires were the primary instrument across all five studies, occasionally supplemented by interviews and observations (e.g., Kamale et al.).
- **Focus on quality and technology-related variables:** Common themes included information quality, digital infrastructure, staff technical competence, platform functionality, and user satisfaction.
- **Statistical significance:** All findings demonstrated a statistically significant positive relationship between e-governance implementation and improved administrative or academic performance.

Differences Across Studies

- **Geographical and administrative contexts:** Studies were conducted in different countries—Saudi Arabia, Nigeria (Adamawa, Calabar), Peru, and Europe—leading to variations in:
 - Maturity of digital transformation
 - Nature of ICT infrastructure
 - University size and governance models
 - Level of governmental policy support
- **Sample size and selection methods:**
 - Large samples: 628 (Al-Ruwathi), 400 (Nigeria)
 - Small sample: 97 (Peru)
 - Mixed-method sampling: Kamale et al. combined questionnaires, interviews, and observations.
- **Theoretical frameworks and measurement tools:**
 - Alshammari et al. used the **E-GOVQUAL** model.
 - Al-Ruwathi employed **exploratory factor analysis** to identify four e-governance dimensions.
 - Nigerian studies emphasized **ICT infrastructure, staff, and utilization**.
- **Key findings varied by context:**
 - **Alshammari:** Information quality, interactivity, and web functionality were most impactful.
 - **Nigeria (Kamale):** Clear improvements in administrative efficiency.
 - **Peru:** Emphasis on data interoperability, with digital security identified as a gap.
 - **Calabar:** ICT infrastructure and staff quality were critical for student management.
 - **Saudi Arabia:** “Added value” had the greatest impact, while “strategic alignment” was most implemented but least effective.
- **Maturity of e-governance:**
 - **Saudi Arabia:** High maturity.
 - **Nigeria:** Focus on infrastructure and basic administrative efficiency.
 - **Peru:** Need for stronger cybersecurity and digital services.
 - **European context (Alshammari):** Emphasis on service quality and performance linkage.

Synthesis

This comparative analysis reveals that digital transformation in higher education is a global trend, yet its progress varies significantly based on: governmental support, digital infrastructure, human resource competence, adopted governance models, and institutional maturity. While existing research consistently affirms the positive impact of e-governance, it diverges in focus—ranging from institutional performance and user satisfaction to academic management and student services.

Notably, context-specific findings emerge: cybersecurity is a priority in Peru, while added value” dominates in Saudi Arabia. Overall, the literature underscores that e-governance is not merely a technical endeavor but an integrated institutional process encompassing **technology, organizational structures, human resources, competencies, and policy frameworks**. The more holistic and coherent this integration, the more pronounced its impact.

1. Conceptual Framework

1.1 The Concept of Governance

The Organisation for Economic Co-operation and Development (OECD) defines governance as the system by which corporate affairs are directed and controlled.” It entails the allocation and distribution of rights and responsibilities among various stakeholders—including boards of directors, shareholders, and other interested parties—and establishes the rules and procedures necessary for decision-making regarding corporate affairs. Furthermore, it involves setting institutional objectives and strategies, as well as defining monitoring mechanisms to evaluate and oversee performance. Similarly, the International Finance Corporation (IFC) describes governance as the system through which institutions are managed and their operations controlled.” (Abdel Rahman, 2018, p. 187)

1.2 The Concept of Higher Education Governance

Higher education governance refers broadly to the capacity of universities and higher education institutions to achieve their predefined objectives with the highest possible quality, while continuously improving institutional performance through effective and efficient administrative management. Some scholars further conceptualize it as the embodiment of a set of core values that regulate the university’s internal functioning and decision-making structures. These values guide the definition of institutional goals and responsibilities in alignment with the administrative hierarchy of the Ministry of Higher Education and foster enhanced inter-university collaboration through twinning and partnership frameworks. (Attaallah & Abrieim, 2021, p. 697)

In the context of higher education, governance denotes the organizational approach through which institutions operate internally to fulfill their public mission, serve the common good, and maintain public trust. Good governance constitutes a cornerstone of quality higher education and encompasses a coherent set of principles, practices, and processes that ensure effective, responsible, and ethical institutional management. It includes the mechanisms by which decisions are made, policies formulated, resources allocated, and strategic goals pursued. Indicators of good governance include transparency and accountability, stakeholder participation, ethical leadership, quality assurance, continuous improvement, and equity and inclusivity. A multifaceted perspective is essential to fully appreciate the complexities of governance in higher education. (Muftahu, 2021, p. 50)

1.3 E-Governance

E-governance is commonly defined as the strategic use of information and communication technologies (ICTs) by the state to enhance the quality and accessibility of public services for citizens. More broadly, it refers to the deployment of digital technologies to foster active citizen participation in political and administrative processes, thereby strengthening democratic engagement and institutional responsiveness. (Hamdi Abdel-Baqi Rahim & Sherin , 2025, p. 28)

1.4 Key Characteristics of E-Governance

- **Transparency:** A modern governance principle implying the continuous flow of reliable information from official sources through diverse media channels, enabling public oversight that curbs corruption. ICTs facilitate transparency by ensuring easy, open access to information via the internet. Transparency contributes to:
 - Preventing improper administrative practices,
 - Enhancing institutional adaptability to environmental and technological changes,
 - Strengthening administrative oversight and procedural clarity,
 - Promoting organizational development. (Abdel-Latif & Abu Aita, 2023, pp. 2238-2239)
- **Participation:** Refers to the inclusion of civil society organizations and individual members of the institution in policy formulation and the establishment of operational guidelines. It empowers all stakeholders to actively contribute to decision-making processes.
- **Equity:** Ensures equal rights and responsibilities for all individuals within institutions, guaranteeing fair access to opportunities and services regardless of nationality, belief, or personal convictions.
- **Accountability:** Obliges administrators and authorized personnel to disclose information about their management practices and remain answerable for their responsibilities—financial, operational, and programmatic. (Abdel-Latif & Abu Aita, 2023, p. 2239) Benefits include:
 - Clear definition of staff roles and responsibilities,
 - Focus on educational and pedagogical outcomes,
 - Continuous improvement of teaching and administrative methods,
 - Objective and accurate performance evaluation,
 - Implementation of a merit-based reward and sanction system. (Abdel-Latif & Abu Aita, 2023, p. 2239)

1.5 The Importance of E-Governance in Universities

E-governance constitutes a fundamental administrative approach for universities to navigate rapid environmental and technological changes. By enhancing transparency and eliminating temporal and spatial barriers, it empowers academic staff with greater autonomy and shared responsibility. For universities, e-governance is vital for achieving institutional objectives efficiently, ensuring compliance with national regulations, and safeguarding institutional resources through principles of integrity and impartiality. It clarifies individual responsibilities, enables real-time error correction, balances long-term strategic goals with short-term operational demands, and fosters collaborative working relationships across university units. (Issa Anab Al-Ra'i & Mohamed Hossni Abu Ela, 2022, pp. 462-463)

Moreover, e-governance helps identify institutional weaknesses, enhances competitiveness, optimizes resource utilization, and protects the rights and interests of staff by serving as a mechanism for internal oversight and self-regulation. The adoption of e-governance systems accelerates service delivery by replacing manual processes with automated workflows, thereby reducing processing times and enabling more precise and efficient monitoring than traditional administrative methods. Additionally, it significantly lowers operational costs by minimizing reliance on paper-based documentation and physical resources. (Issa Anab Al-Ra'i & Mohamed Hossni Abu Ela, 2022, p. 463)

1.6 Benefits of E-Governance in Higher Education Institutions

- **For the university:** Centralized access to information from any location, delivery of high-quality digital services, enhanced stakeholder engagement, improved clarity in operations, and more informed decision-making.
- **For students:** Increased involvement in academic affairs, personalized digital accounts, broad access to information with reduced time, effort, and cost, streamlined access to administrative and informational services, social interaction opportunities, virtual access to lectures and seminars, and direct channels to submit feedback to the institution.
- **For faculties and departments:** Easy access to institutional data, seamless electronic data exchange with central administration, and instantaneous generation of statistical reports. (Al-Baltagi, 2022, p. 186)
- **For the education system as a whole:** Long-term positive impact on institutional objectives, overall system improvement, and empowerment of both students and faculties through inclusive participation in governance.

Integrating e-governance into education enables innovative communication channels—between teachers and students, among educators across institutions, and among students themselves. This fosters novel approaches to knowledge dissemination and redefines service delivery models. Over time, it strengthens the relationship between institutional leadership and students through mobile technologies, internet platforms, and digital communication tools, ultimately advancing the realization of core educational goals. (Al-Baltagi, 2022, p. 187)

2. An Analytical Review of Algeria’s E-Governance Efforts in Higher Education and Scientific Research

The integration of internet-based technologies across educational and scientific research institutions in Algeria—spanning laboratories, research centers, and universities—has achieved comprehensive nationwide coverage. The implementation of e-administration and digital services in Algerian universities primarily aims to drive qualitative development and modernize management practices. This transformation ensures operational efficiency, strengthens scientific research activities, and leverages the expertise generated within the university ecosystem. Algerian universities, in collaboration with specialized centers, have actively pursued the adoption of intelligent e-administration technologies. (Cherifi & Bouzyane, 2019, p. 242)

2.1 Key Strategic Pillars of the Ministry of Higher Education and Scientific Research for Smart E-Governance

Digital platforms constitute a core component of the Ministry’s overarching National Digitization Strategy, which comprises **7 strategic axes, 16 strategic programs, and 102 operational programs**. This strategy aims to facilitate student success throughout all stages of higher education—from academic guidance to graduation and professional integration—and to promote pedagogical innovation and comprehensive governance modernization. (Digital Platforms Portal, n.d.)

Table 1: Key Digital Platforms by Strategic Axis (Ministry of Higher Education and Scientific Research)

Strategic Axis	Platform	URL
Digitization for Coherent Academic	Alumni & Certificate Verification Portal	http://ancients.mesrs.dz/public/
	Student Academic Portal	https://progres.mesrs.dz/webetu/login.xhtml

Offerings	(grades, timetables, calendars, etc.)	
Digitization to Support Student Success	Online English Course (including for medical students)	https://dual-mesrs.dz/
	Ask Me” Platform for New Students	https://ask.mesrs.dz/
	Academic Specialization Guidance (Reference Framework for Training–Employment Alignment)	https://www.mesrs.dz/crafe/
	Career Guidance Platform	https://www.mesrs.dz/crafe/?cat=40&lang=ar
Digitization for Research Activities	Research and University Training Projects (PRFU) Platform	https://www.prfu-mesrs.dz/
	Innovative Projects Management System (supporting incubators, manufacturing labs, startups)	https://sgpi.mesrs.dz/ar/
	Algerian Medical Publications Repository	http://pubmed.mesrs.dz/
Digitization for Modern Administration	Human Resources Management Platform (health monitoring, CNEC, unified window, senior positions)	https://progres.mesrs.dz/webgrh/
	Assets Monitoring and Maintenance Platform	https://progres.mesrs.dz/webplhs/
	Integrated Information System	https://progres.mesrs.dz/
	Electronic Document Routing (Parapheur Électro)	http://courriers.mesrs.dz:8001/login
National and International Relations	Institutional Publications Portal (ASJP)	https://asjp.cerist.dz/
	Foreign Students Registration & Scholarship Management	https://progres.mesrs.dz/international-students/

International Training & Mobility Management (DCEU)	https://services.mesrs.dz/DCEU/login/index.php
Guest Researchers Management	https://ceu.mesrs.dz/
Joint Thesis Supervision Platform	https://ceu.mesrs.dz/
Administrative & Technical Staff Mobility	https://ceu.mesrs.dz/
International Agreements Monitoring	https://ceu.mesrs.dz/
Student Mobility Management	https://ceu.mesrs.dz/

Source: Authors' compilation based on (Digital Platforms Portal, n.d.).

2.1.1 Digitization for Coherent Academic Offerings

This axis aims to promote visible, coherent, and locally rooted academic programs—delivered online, in-person, or hybrid—while enhancing students' digital competencies and ensuring seamless access to learning resources from any device (tablet, PC, or smartphone) (Research, 24-10-2022, p. 26). It includes:

- **Alumni & Certificate Verification Portal (Alumni-DZ):** Algeria's first national alumni network, enabling graduates to maintain connections, share success stories, exchange professional knowledge, and disseminate internship or job opportunities for current students. (Alumni Ground - Certificate Broker, n.d.)
- **Student Academic Portal ("Tamdars"):** A centralized digital space providing students with academic records, grade reports, timetables, academic calendars, weekly schedules, exam programs, and remote learning materials uploaded by instructors. (Ben Ahmed, p. 14)

2.1.2 Digitization to Support Student Success

This axis establishes an integrated framework that fosters student autonomy, enhances pedagogical quality, and builds competencies aligned with the knowledge economy. Key platforms include:

- **Online English Course (including for medical students):** Available to baccalaureate graduates via the *BAC2024* button using their registration credentials; also accessible to students and faculty for remote English learning via Moodle and secured local platforms. (Online English Course Platform including for Medicine, n.d.)
- **Ask Me” Platform for New Students:** A direct interaction channel for 2024 baccalaureate holders to ask questions about academic programs and university services, with responses provided by ministry specialists. (Platform for New Students, n.d.)

Table 2: Engagement Statistics on the Ask Me” Platform

Questions	Answers	Users
1700	1500	35200

Source: Authors' compilation based on (Platform for New Students, n.d.)

- **Specialization Guidance (Reference Framework for Training–Employment Alignment):** Developed by the University of M’sila in collaboration with regional institutions and authorities, this framework maps employer-required professional competencies against the university’s training offerings, enabling curriculum alignment with labor market needs and improving graduate employability. It operationalizes the Ministry’s competence-based approach. (Student Guidance Platform toward Specializations (Reference Framework for Training–Employment Alignment), n.d.)
- **Career Guidance Platform:** Provides new graduates with occupational profiles aligned with the *Algerian Occupational Classification System*, including job codes, definitions, practice requirements, workplaces, and key tasks. (Student Guidance Platform toward Professional Life, s.d.)

2.1.3 Digitization for Research Activities

This axis enhances research practices by offering researchers a more open, flexible, and responsive digital environment, thereby improving scientific output and innovation efficiency:

- **PRFU Platform:** Manages research-training projects—both ongoing and completed—enabling project leaders to submit reports, document laboratory outputs, and ensure visibility, monitoring, and evaluation. (PRFU Platform (Research and University Training Projects Management), , n.d.)
- **Innovative Projects Management System:** A collaborative platform supporting idea incubation, startup creation, manufacturing labs, and entrepreneurial mindset development among students. It aims to foster a generation of innovators who strengthen local and national economies and enhance international competitiveness. The system encourages crisis-responsive innovation and student-led business creation to reduce graduate unemployment. (Innovative Projects Management Platform, n.d.)

Key training workshops include:

- Train-the-Trainer
- Design Thinking
- Business Model Canvas (BMC)
- Presentation & Pitching Skills
- Intellectual Property Protection
- Prototype Design

Table 3: Support Institutions and Resources for Innovative Projects

Supporting Institution	URL
Startup Algeria	https://startup.dz/
DGRSDT – Research in Service of Citizens	https://dgrsdt.dz/
Ibtikar (Innovation Platform)	https://ibtikar.dgrsdt.dz/
ANVREDT – National Agency for Valorization	https://anvredet.org.dz/
ONDA – National Office for Copyright	https://onda.dz/

Source : Authors’ compilation based on (Innovative Projects Management Platform, n.d.).

- **Algerian Medical Publications Repository:** An institutional repository for researchers across all health disciplines. (Digital Platforms of the Ministry of Higher Education and Scientific Research according to the Digitization Strategic Guidance Plan, n.d.)

2.1.4 Digitization for Modern Administration

This axis modernizes university administration by streamlining procedures, accelerating transactions, providing accurate data for decision-making, enhancing transparency, reducing errors, and improving HR efficiency:

- **Human Resources Management Platform:** Digitally manages all personnel files (academic, administrative, technical), including regulatory texts on recruitment, promotion (e.g., to *Maître de Conférences A* or *Professeur*), positions, absences, overtime, leave, and electronic signatures for attendance logs. It also enables online issuance of employment and administrative certificates and processes applications for senior positions. The occupational health module tracks medical records and adapts roles to health requirements. (User Management Platform., n.d.)
- **Assets Monitoring and Maintenance Platform:** Systematically registers and displays ICT equipment and infrastructure, records inventory operations, and enables structured maintenance tracking. It serves as both preventive and corrective mechanism for asset mismanagement, enhancing transparency and governance in asset administration. (Assets Monitoring and Maintenance Platform, n.d.)
- **Integrated Information System:** Plays a strategic role in connecting disparate institutional systems to the national digital ecosystem through interoperable interfaces with *PROGRES*, thereby transforming universities into integrated nodes within the national information infrastructure. (Integrated Information System Platform, n.d.)
- **Electronic Document Routing (Parapheur Électro):** Digitizes administrative drafting, correspondence management, and structured e-archiving, enhancing transparency and administrative governance. (Digital Platforms of the Ministry of Higher Education and Scientific Research according to the Digitization Strategic Guidance Plan, n.d., p. 01)

2.1.5 National and International Relations

This axis leverages digital tools to strengthen institutional communication and collaboration through secure, rapid exchange of information and documents, facilitating partnerships, project coordination, and academic mobility—thus boosting international visibility and national-international integration:

- **Institutional Publications Portal (ASJP):** A unified space aggregating scientific output from all Algerian universities, serving as a strategic tool for academic digitization.

Table 4: The number of published articles and journals in ASJP

Articles Published	Journals
257237	887

Source: Authors' compilation based on (A platform for institutional publications (ASJP), n.d.)

Foreign Students Management Platform: Streamlines the application process for scholarship recipients from friendly nations. Applicants create accounts, submit personal data, diplomas, and a ranked list of four preferred programs, then confirm their files. The Directorate of University Cooperation and Exchange processes applications, verifies diploma equivalency, and issues enrollment licenses.

This is done by filling out three forms:

Form 1: Entering personal information.

Form 2: Entering certificates and supporting documents.

Form 3: Entering a list of preferences. This step allows you to apply for four (4) training courses of your choice, in order of preference.

The foreign student then verifies the accuracy of their information and forms by confirming them on the platform.

Finally, their file is processed. The equivalency department reviews the diploma to determine whether or not it is equivalent to the submitted Algerian diploma. Following this, the student's application form is processed, and finally, they are granted authorization by the Directorate of University Cooperation and Exchange. (Foreign Students Management and Monitoring Platform, n.d.)

This platform unifies and digitizes the reception of international students.

From the above, we no longer believe that the goal of the head of administration and follow-up of requests is to increase follow-up, and to focus solely on receiving students in large numbers within a full range.

- **International Training & Mobility Platform:** Manages state-funded scholarships and registers international students for Master's and PhD programs, with automated processing based on scientific council recommendations. (Training (or Mobility) Management Platform Abroad, n.d.)
- **International Agreements Monitoring Platform:** Centralizes, tracks, and updates all bilateral/multilateral academic and research agreements (e.g., the 2025–2026-2027 Algeria–Mauritania Executive Program), enabling universities to monitor commitments, coordinate activities, and inform evidence-based decision-making. (Training (or Mobility) Management Platform Abroad, n.d.)
- **Guest Researchers Platform:** Registers visiting scholars, their research, and collaboration requests from external academics. (Digital Platforms of the Ministry of Higher Education and Scientific Research according to the Digitization Strategic Guidance Plan, n.d., p. 03)
- **Joint Thesis Supervision Platform:** Enables structured scientific collaboration between Algerian and foreign co-supervisors from the same discipline to jointly guide PhD candidates, enhancing research quality and international integration. (Joint Thesis Supervision Management and Monitoring Platform, n.d.)

From the contents of the joint thesis supervision management and follow-up platform, we conclude that its goal is to raise scientific cooperation between national and international expertise, to follow the student's progress in an organized manner to record the different stages of the thesis, to improve the quality of scientific research, and to support digitization in higher education by achieving integration between national and international university systems.

- **Administrative & Technical Staff Mobility Platform:** Facilitates transparent, data-driven redistribution of human resources based on institutional needs and available positions.
- **Student Mobility Platform:** A governance tool that standardizes and digitizes inter-university student transfers, replacing paper-based processes with a transparent, criteria-driven system that ensures equity, central data coordination, and academic stability.

2.2 University Service Platforms

Table 5: University Service Platforms

Platform	URL
My Concerns” (Inchighalati)	https://onou.dz/WebONOU/inchighalat/
University Transport	https://mybus.onou.dz/MyBus/
University Housing	https://webonou.mesrs.dz/
Dormitory Access Control	https://onou.mesrs.dz/login
Meal Service Management	https://onou.mesrs.dz/login
University Scholarship	https://progres.mesrs.dz/eminha/login.xhtml

Source: Authors’ compilation based on (Integrated Information System Platform, n.d.).

- **My Concerns” Platform:** Enables direct, transparent communication between students and the Ministry’s university services unit for documenting requests, reporting issues, and tracking service delivery.
- **University Transport Platform:** Allows real-time tracking of campus shuttle services.
- **University Housing Platform:** Facilitates secure online applications for dormitory accommodation. Students log in using their baccalaureate registration number and the case-sensitive password from their official grade sheet. (University Registrations for 2024 Baccalaureate Holders, n.d.)
- **Dormitory Access Control:** Digitally monitors entry/exit via integrated security systems linked to the central ministry database, enhancing safety and presence tracking.
- **Meal Service Management:** Uses precise information systems to improve catering quality, transparency, and efficiency under the National Digitization Program.
- **University Scholarship Platform:** Digitally streamlines scholarship applications, processing, and social support management, aligning with national digitization goals.

2.3 Other Digital Platforms

Table 6: Additional Platforms

Platform	URL
Complaints	https://progres.mesrs.dz/rdvdoleance/
Permanent Researchers Promotion / Unified Digital Portal	https://progres.mesrs.dz/webgrh/login.xhtml
PhD Defense File Tracking	https://progres.mesrs.dz/webfve/login.xhtml
University Cinema	https://services.mesrs.dz/plateforme/login/index.php
Certificate Authentication	https://progres.mesrs.dz/webauthentication/pages/index.xhtml
Business Incubator Monitoring (ANVREDT)	https://anvredet.org.dz/
Clearance Certificate	https://quittance.mesrs.dz/login

Applications for University Services Director	https://progres.mesrs.dz/webgrh/login.xhtml
Chatbot	https://www.mesrs.dz/
Baccalaureate Graduates Support	https://bac.mesrs.dz/

Source: Authors' compilation based on (Integrated Information System Platform, n.d.).

2.4 Key Smart Portals by CERIST (Research Center for Scientific and Technical Information)

Table 7: CERIST's Smart Portals

Portal	URL
Algerian Research Network (ARN)	http://www.arn.dz
National Thesis Notification Portal	https://www.pnst.cerist.dz/pnstARABE/index.php
National Digital Documentation System (SNDL)	https://www.sndl.cerist.dz
NIC-DZ (Domain Name Registry)	http://www.nic.dz
WebTV	https://webtv.cerist.dz/
Wissal (Internet Services Portal)	http://www.wissal.dz
Freesoft (Open-Source Software)	http://freesoft.cerist.dz
WebReview (Unified Journal Portal)	http://www.webreview.dz/
CERIST Digital Library (DL)	http://dl.cerist.dz
Algerian University Libraries Portal	http://www.bibliouniv.cerist.dz
Algerian Libraries Directory	http://www.rbdz.cerist.dz/
Algerian Union Catalog (CCDZ)	http://www.ccdz.cerist.dz/ccdz_ar

Source: Authors' compilation based on (Research Center in Scientific and Technical Media, n.d.)

- **Algerian Research Network (ARN):** A national–international backbone network connecting all scientific and technological institutions, ensuring robust infrastructure for academic communication. (Algerian Research Network, n.d.)
- **National Thesis Notification Portal:** Supports national scientific output in line with Ministerial Order No. 153° (May 14, 2012), mandating centralized thesis archiving and dissemination. (National Thesis Notification Portal, n.d.)
- **SNDL:** Provides access to a vast array of subscribed and open-access electronic resources across life sciences, technology, humanities, and multidisciplinary fields— including journals, databases, e-books, theses, and reports. (National Digital Documentation System, n.d.)
- **NIC-DZ:** The ICANN-accredited registry for the .dz country-code domain, having registered 18,354 domains for Algerian entities with legal representation or trademark rights. (NIC-DZ Domain Names Center, n.d.)
- **WebTV:** Hosts conference recordings, documentaries, scientific reports, and educational WebDocs (e.g., on manuscript restoration), along with a media gallery.

- **Wissal:** Offers professional email, web hosting, and server services; disseminates national news and announcements; and supports CERIST’s regional offices across three national hubs. (Wissal Internet Services Portal, n.d.)
- **Freesoft:** Promotes open-source software development in Algeria by providing free downloads and technical resources [39]. (Freesoft (Free Software) Portal, n.d.)
- **WebReview:** A federated portal aggregating Algerian scientific journals across agriculture, archaeology, arts, sports, chemistry, economics, education, psychology, geography, computer science, languages, and more, supporting open or restricted access publishing. (CERIST Scientific Journals Unified Website (WebReview), n.d.)
- **CERIST Digital Library (DL):** An institutional repository hosting the Center’s academic output—articles, conference papers, technical reports, theses, and enhanced courses. (CERIST Digital Library Portal, n.d.)
- **University Libraries Portal:** An open documentary gateway for students, researchers, and librarians to modernize library curricula and operations. (Algerian University Libraries Portal, n.d.)
- **Algerian Libraries Directory:** Catalogs libraries and documentation centers, providing contact details, working hours, and specialization areas. (Algerian Libraries Directory, n.d.)
- **Algerian Union Catalog (CCDZ):** A national bibliographic database enabling resource sharing, collective cataloging, reduced costs, and unified access to library holdings. It supports interlibrary loan services and the development of a national controlled vocabulary. (Algerian Union Catalog, n.d.)

3. Analytical Findings from the Ministry’s Digital Platforms Portal

3.1 Results by Strategic Axis

Table 8: Analytical Results of the Digital Platforms Portal

Axis	Performance Indicators	Achieved/Expected Outcomes
Coherent Academic Offerings	– Number of digitized programs – Program update rate – of specializations aligned with training–employment reference	– Improved program planning – Better alignment with student and labor market needs
Student Success Support	– Number of student-facing platforms	– Enhanced academic tracking – Academic/career guidance – Improved success & progression rates
Research Activities	– Number of digitized research projects – Volume of documented research data	– Improved research and innovation management
Modern Administration	– Database integration level – Reduction in paper transactions – Availability of dashboards & data accuracy	– Streamlined procedures – Enhanced e-governance – Data-driven decision-making
National/International Relations	– Number of digitized agreements – of cooperation programs implemented	– Improved monitoring of scientific collaboration

Source: Authors’ compilation based on (Digital Platforms Portal, n.d.).

3.2 Thematic Analysis of Platform Performance

Table 9: Thematic Evaluation of Digital Platform Impact

Evaluation Dimension	Supporting Platforms	Key Outcomes
Functional Coverage (breadth across university life)	Complaints, Certificate Authentication, PhD Tracking, Researcher Promotion, Baccalaureate Support	Comprehensive digitization of administrative, academic, research, and service domains
Administrative Efficiency	Clearance Certificate, Certificate Authentication, PROGRES Unified Portal	Reduced processing times, improved performance, lighter user burden
Transparency & Governance	Complaints, PhD File Tracking	Enhanced integrity, reduced human intervention, institutional accountability
Research Support	Researcher Promotion, PhD Tracking, Incubator Monitoring	Improved research career management, stronger research–innovation–entrepreneurship linkage
User Experience	Chatbot, Baccalaureate Support, University Cinema	Improved communication, instant guidance, higher student satisfaction
Digital Integration	PROGRES Unified Portal	Unified university information system and inter-institutional coordination

Source: Authors' compilation

Conclusion

This analytical review demonstrates that digitization in Algerian higher education has evolved beyond a mere technical choice into a foundational pillar for reshaping the entire university ecosystem. Digital solutions actively contribute to building coherent academic offerings aligned with the university’s core missions. Digitization emerges as a decisive enabler of student success—through tracking tools, distance learning systems, and platforms that ensure program clarity, coherence, and easy access to pedagogical content, thereby supporting flexible and effective academic pathways.

In research, e-governance has established a centralized, unified digital infrastructure that makes scientific knowledge universally accessible through shared publishing spaces and integrated databases, significantly enhancing research quality and fostering collaboration.

At the administrative level, digitization has introduced more transparent, efficient, and intelligent management models based on accurate, real-time data—replacing manual workflows, reducing bureaucracy, and enabling evidence-based decision-making.

Furthermore, digital platforms have expanded the university’s national and international reach through secure, instantaneous exchange of data, research results, and academic information. They enable transparent, organized management of joint projects and resources, fostering collaborative research networks both domestically and globally.

Thus, digitization has become the backbone of the modern Algerian university—a key driver for upgrading education quality, strengthening research, empowering students, modernizing administration, and consolidating the university's presence in its local and global environments.

Key Findings

- The digital portal provides a **comprehensive ecosystem** covering all stages of the student journey—academic success, research management, international cooperation, and agreement administration.
- Platforms are integral to the **National Digitization Program** (7 axes, 16 strategic programs, 102 operational programs), aiming to guide students from orientation to professional integration while fostering innovation.
- The portal has enabled **holistic digitization** across pedagogical, research, administrative, and international dimensions.
- The Ministry is actively **simplifying and accelerating administrative procedures** to deliver inclusive, diverse services for the entire university community.
- A **dynamic expansion** is evident: from 9 platforms in February 2023 to approximately 36 by May 2023, reflecting the state's continuous investment in digital infrastructure to meet user needs.
- The portal has significantly **enhanced the attractiveness of Algerian universities** and modernized university administration in line with global digital transformation standards.

Recommendations

- **Regularly update digital content** and enhance training quality—particularly academic programs and guidance tools—to ensure alignment with labor market demands and national digitization objectives.
- **Unify institutional databases** and ensure technical interoperability across digital platforms to strengthen digital governance and eliminate data and system duplication.
- **Enhance platforms** for tracking research projects, innovation, joint supervision, and international agreements, including robust impact evaluation mechanisms.
- **Implement continuous digital transformation training programs** for staff and adopt **digital performance indicators** to measure platform impact and ensure continuous improvement, in line with the National Digitization Program.
- **Launch sustained awareness and training campaigns** on platform usage and best practices to maximize user engagement and digital infrastructure utilization.
- **Adopt robust data protection mechanisms** for institutional and personal data to ensure information security and build user trust in digital platforms.
- **Support the development of innovative digital applications and services** within platforms to enrich the pedagogical and research experience and encourage active participation from all stakeholders.

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