The role of digitization in upgrading the higher education sector

دور الرقمنة في ترقية قطاع التعليم العالي

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Abstract:

Digitization is a tangible reality experienced by all sectors in all countries. In Algeria, the state has drawn up a strategy to generalize digitization in all activities. This strategy includes a set of measures, such as setting legislation, training and providing the necessary equipment.

Digitization is the topic of the hour, starting from the program of the President of the Republic and through the government's action plan, the many legislative texts issued, and the various measures taken by the authorities in all fields.

The higher education and scientific research sector emerged as a major actor in the implementation of this strategy thanks to the activities of training, higher education and scientific research that it exercises. This study aims to investigate the status of digitization in the higher education and scientific research sector through a problematic centered on: how the higher education and scientific research sector embodied the digitization project?

Keywords: digitization, higher education and information technologies.
Jel Classification Codes : I23; C88.

Abstract in Arabic:

الرقمنة واقع ملموس تعيشه كل الدول وفي جميع القطاعات بحكم عدة عوامل منها تطور التكنولوجيا والعولمة التي جعلت من العالم قرية صغيرة لأنها دخلت في كل المجالات. في الجزائر، سطرت الدولة إستراتيجية لتعميم الرقمنة في كل النشاطات، تتضمن هذه الإستراتيجية مجموعة من الإجراءات من طبيعة مختلفة، كوضع التشريعات و التكوين، وتوفير التجهيزات الضرورية.

تشكل الرقمنة موضوع الساعة، انطلاقا من برنامج رئيس الجمهورية، ومرورا بمخطط عمل الحكومة و عديد النصوص التشريعية والتنظيمية التي صدرت، و الإجراءات المختلفة التي تتخذها السلطات في كل المجالات.

لم يبق قطاع التعليم العالي و البحث العلمي بعيدا عن هذه الديناميكية و برز كفاعل رئيسي لتطبيق هذه الإستراتيجية بفضل نشاطات التكوين و التعليم العاليين و البحث العلمي التي يمارسها. في هذا الإطار، تهدف هذه الدراسة إلى البحث في مكانة الرقمنة في قطاع التعليم العالي والبحث العلمي من خلال إشكالية تتمحور حول: كيفية تجسيد قطاع التعليم العالي والبحث العلمي لمشروع الرقمنة؟

الكلمات المفتاحية: الرقمنة، التعليم العالي، وتكنولوجيات الاعلام.

تصنيف جال: I23; C8

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Introduction:

As a result of the major transformations the world is witnessing as a result of globalization, the proliferation of digital spaces, and the rapid knowledge and technological progress, the Ministry of Higher Education and Scientific Research has set the main milestones for the digitization of administrative work, and linking the various structures of the sector with its resources through a digital network that will improve the flow of information in a way that reduces efforts and costs, and satisfies the needs of service seekers from the Ministry and its various structures. For this purpose, a digital platform was established to manage the sector's facilities and resources, and regulate the functional and professional relationship of its affiliates, which makes us ask the following fundamental question:

Problematic:

How can digitization be a means of improving the quality of public service? How did the higher education and scientific research sector embody the digitization project?

Research Hypotheses:

To answer this problem, we put forward the following hypotheses:

- Administrative reform is an imperative to move towards digitization in public administration with the aim of bringing about a break with old administrative practices.
- Adopting the "Progress" platform is a quantum leap in the field of administrative management of the higher education and scientific research sector and the actual embodiment of the digitization project.

The importance of the research:

The importance of the research stems from the reality of applying digitization to make the public service rise and develop, as digitization has become necessary and inevitable in order to advance and modernize public service, and public utilities similar to the university, its application has become a measure of the development of institutions and administrations in our time, and their ability to respond to the wishes and concerns of citizens, Bringing them closer to the administration, and achieving quality standards in providing public services.

Research objectives:

Through this research, we seek to stand on the impact of digitization of administrative operations and activities at the level of public administration, in particular the university administration, in a way that allows the efforts made to be evaluated to be revealed or to participate in correcting their direction.

Research method:

In most of our research, we relied on a descriptive approach such as employing digitization and the reasons leading to its adoption, as well as the requirements for its establishment, and the obstacles that may hinder its success. This approach helped us describe the reality of applying digitization in managing a service sector that is related to a large part of society.

Study Structure:

Our research came in two parts. In the first part, we tried to develop a theoretical background for the concept of digitization, and how it can contribute to improving the quality of public service, passing through the reform of administrative management to abandon traditional practices that resulted in administrative stagnation that negatively affected the

lives of individuals and institutions. The second part tends to study the case, where we revealed the reality of the embodiment of the digitization project through the measures adopted by the Ministry of Higher Education and Scientific Research in favor of the digitization of the sector, and addresses how to embody the "progress" platform in the higher education and scientific research sector and its orientation towards digitization.

Finally, we concluded the research with a conclusion that includes the results of the research and some suggestions that we consider important for accessing the digital world in an effective and flexible way.

I. The concept of digitization, its characteristics, applications, requirements and benefits:

In an economic and social environment that knows narrow transformations, organizations found themselves facing major challenges and different methods of management, which required them to find new ways to enable them to absorb these developments, and the current era is the era of information technology.

1 - What is digitization:

Given the organization's current reliance on advanced technology that helps it accomplish its work and achieve its goals quickly, accurately, and at the lowest possible costs, it is necessary to address the concept of information technology, its characteristics, and its importance.

The concept of digitization:

Some see that information technology is a simple term, but in fact it is a compound of many diverse and different concepts, and for this reason, each of technology and information will be defined separately, leading to a comprehensive definition of information technology, where technology is defined as: "the effective and effective organization and use of human knowledge and experience through methods with high application efficiency, directing discovery and potential forces for the purpose of development and achieving the preferred performance (Article 62 of the Tax Procedures Law).

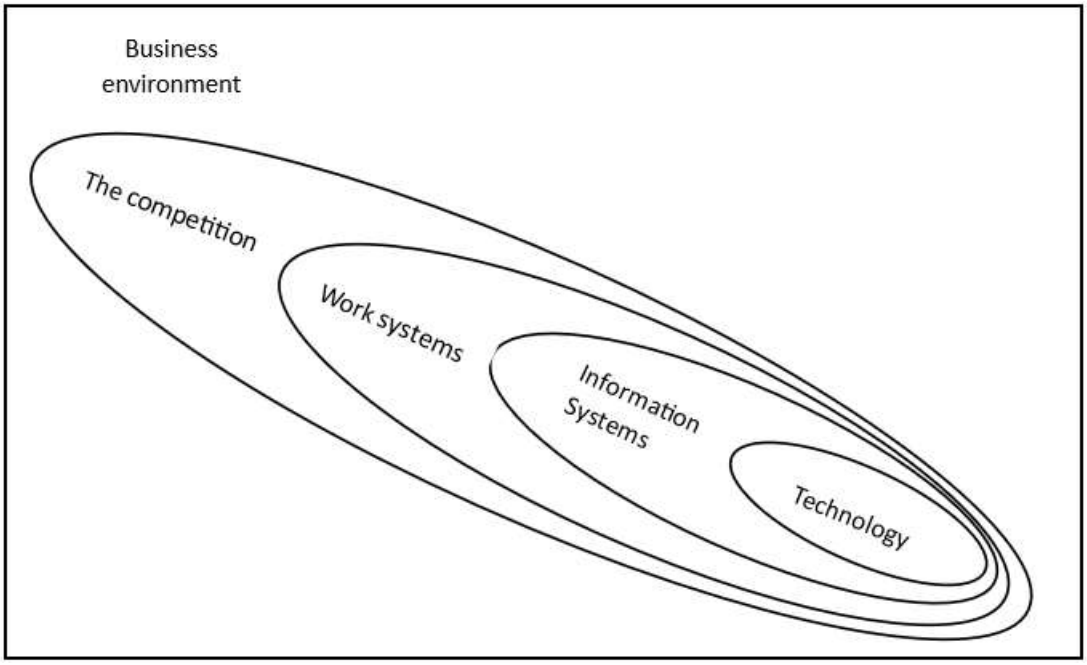
As for information, it refers to "data or facts that have been processed and can be stored, retrieved, and formed (Article 63 of the Tax Procedures Law).

And if technology is the application of scientific knowledge to design, produce and use products that expand the human ability to develop and control the human natural environment, many writers have resorted to contributing to the analysis of the information technology phenomenon, each of them looking at the subject from his own angle and according to his scientific inclinations or convictions Therefore, a number of definitions will be presented as follows:

- The totality of scientific knowledge used in the industrial field, especially devoted to the study, production and marketing of peaceful goods and services to replace manual labor with advanced modern machines (Wesbster illustrated, 1982, p75).
- A set of parts that are linked to each other, including a quick preview of the information.
- A set of interrelated parts, including rapid processing of information, using computers, application of statistical and mathematical methods in solving problems, and simulation of thinking through computer programs(information technology, 2019).
- Developing and publishing business applications and systems as they cover all the organizations' work, as they are more than just electronic spreadsheet programs, or word processing, although they mean the amount of use of spreadsheet programs for word processing or text.

- The technological aspect of the information system, as it is used by the information system to access, transfer, store, or retrieve information, and this information is used by interrelated work systems that compete in the information environment (NGAOSYVAHN, 1975, P 88).

Figure 1: Digitization



Source: The Impact of the Information System (Management Horizons), Dar Wesley, USA, 1999, p. 43

Through the foregoing, it can be said that information technology is the search for the best means to facilitate the acquisition and exchange of information and make it available to its seekers quickly and effectively (Bobe and Pirlon,, 1987, p135).

2 - Characteristics of digitization:

Information technology has been distinguished from other technologies by a set of characteristics, the most important of which are the following (بدرسي، 1994، ص 5):

1. **Reducing space:** Storage means that accommodate a huge amount of stored information that can be easily accessed.

2. **Reducing time:** Technology makes all places contiguous and close electronically.

3. Dividing intellectual tasks with the machine: as a result of the interaction and dialogue between the researcher and the system.

4. **Stuttering:** In other words, faster, cheaper, etc., and this is the pace of development of information technology products.

5. **Artificial Intelligence:** The most important characteristic of information technology is the development of knowledge and the strengthening of opportunities to train users for inclusiveness and control over the production process.

6. **Formation of communication networks:** such as uniting a group of equipment based on information technology in order to form communication networks, and this increases the flow of information between users, industrialists,As well as machines manufacturers, and allows exchange with other activities.

7. **Interactivity(**بن صغير، 2014، ص46-74**):** that is, the user of this technology can be both a receiver and a sender at the same time. Participants in the communication process can exchange roles, which allows the creation of interactions between activities.

8. **Asynchronous:** It means that the message can be received at any time convenient for the user. Participants are not required to use the system at the same time.

9. **Decentralization:** a feature that allows the independence of information and communication technology.

10. **Connectivity:** It means the ability to connect the various communication devices, that is, regardless of the company or the country in which it was manufactured.

11. **Mobility:** That is, the user can benefit from its services during his movements, i.e. from anywhere, through many means of communication such as computers, mobile phones...etc.

12. **Transferability:** It is the ability to transfer information from one medium to another, such as converting an audible message into a printed or readable message.

13. **Non-public:** It means the possibility of directing the communication message to one individual or a specific group instead of necessarily directing it to huge masses, and this means that it can be controlled as it reaches directly from the producer to the consumer, and it also allows the combination of different types of communications, whether from one person to another One, or from one side to groups, or from all to all, i.e. from group to group.

14. **Pervasiveness:** It is the ability of this network to expand to include more and more unlimited areas of the world, so it gains its strength from this systematic spread of its flexible pattern.

15. **universal:** It is the environment in which this technology is active, as information takes different and complex paths that spread across the world, and it allows capital to flow electronically, especially given the ease of commercial transactions driven by information capital, which allows it to overcome the barrier of space and move across international borders.

3 - Digitization applications

The most important areas of using information technology can be illustrated in the following table with examples of some applications (زينون ، 2002، ص159):

Table No. (1): Areas of digitization usage

The field	An example of usage	impact of use
The field of education and training	- Use of multimedia. - simulation. - Distance learning. - Educational information systems.	- Raise student and teacher productivity. - Reduce risks. - Delivering education to the largest possible number of people on an ongoing basis.
Communications	- Email services. - Internet phone calls. - Remote audiovisual meetings.	- instant messaging. - Cost reduction.
The field of finance and economics	- Electronic money transfer. - Automating banking operations.	- Faster service and less paperwork. - Improving service, speeding up accounts control, and means of financial control over banks.
Administrative domain	- The use of internal and external computer networks in the administrative affairs of institutions. - The use of electronic management in the management of the various activities of the institutions.	- Enhancing communication both within the institution and organizations to achieve integration and cooperation between them. - Saving time and effort.
The industrial field	- Factory automation. - artificial intelligence. - Computer assisted design.	- Reduce production cost. - Achieving accuracy and flexibility. - Reducing errors and work accidents.

Source :(Zainoun, 2002, pp. 159-161)

4 - Digitization Components:

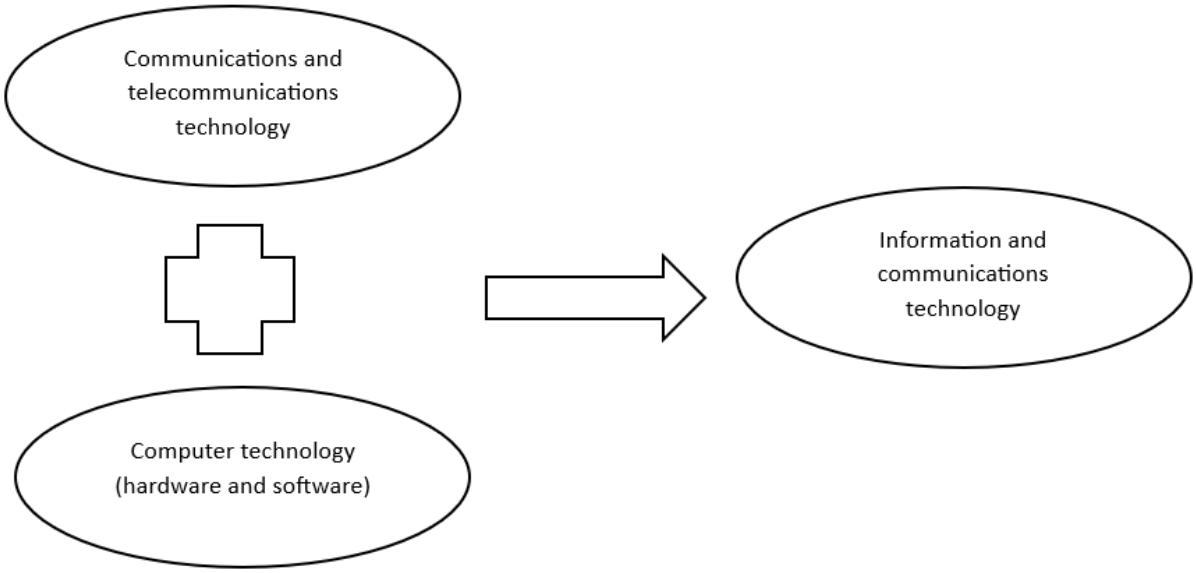
The components of information technology can be divided into the following (كافي،2012،ص72):

- Hardware or devices: used in data entry procedures, processing and extracting information required for decision-making and business performance as required.
- Software components: which includes the detailed, organized instructions that control the hardware components of a computer in an information system, including system and operating software, and application software.

- Storage technology: which includes the media required to store the huge accumulated amount of data such as discs, magnetic tapes, optical discs and their software that controls the organization of data in them.
- Communication technology and long-distance communications: It includes various physical and software media that connect the different sections of the devices and transfer data from one location to another.

It is clear, as mentioned above, that information technology is a suitable product of coherence and integration between both calculation technology and communication technology, and it can be expressed in the following form:

Figure 2: Components of digitization



Source: (Kandilji &Al-Janabi, 2009, p. 32)

5 - Digitization requirements and benefits:

First: Digitization Requirements:

There are many capabilities and requirements that need to be met for the application of information technology, as follows (مغربي، 2007 ، من 235 الى 237):

- administrative, organizational and human requirements;
- technical and financial requirements;
- social and psychological requirements.

In this section, we will focus more on the administrative, organizational, and human requirements:

- Reducing the bureaucracy of office work, and simplifying work procedures, allowing for the reduction of manual labor and physical effort to be replaced by new jobs that provide an opportunity for individuals and workers to innovate and innovate.
- Support and endorsement of senior management for the application of information technology at the level of the organization.
- Developing an effective system of benefits and wages for employees.
- Transitioning from the traditional methods of evaluating the performance of employees to modern methods that rely on the approved approaches to evaluation on the basis of science teams.
- Strengthening the presence of human cadres who are ready, persistent and willing to adopt information technology and apply it in various sectors of activity.

Second: The benefits of digitization:

The application of information technology has the following benefits (مغربي، 2007 ، من 235 الى 237):

- Raising the level of performance: The application of information technology tools has a positive impact on the performance levels of organizations, provided there is a degree of compatibility between the organization's conditions and the strategies for applying information technology.
- Increasing the value of the enterprise: Information technology plays a prominent role in creating value for the company.
- Effectiveness of decision-making: Information technology facilitates the task of managers in making organizational decisions, by providing accurate data and information at the appropriate time with the required conditions.
- Developing work according to specific systems and methods of work: Information technology works to provide order and discipline in administrative units.
- Computer re-engineering: Information technology is an essential element for the success of re-engineering before designing operations with its proposals for the best designs, or after the completion of design operations through its role in the various stages of implementation (A. Margairaz, 1997).
- Developing the positive behavior of individuals: the positive impact on the behavior of individuals within the organization, through its impact on the communication processes inside and outside the organizations, in addition to helping them to manage time efficiently.

Summary:

Digitization has a major role in developing and strengthening the national economy and achieving economic development. It also has positive repercussions on the national economy. Digitization can contribute to adding transparency to economic data and then making the right decisions. The right and correct decisions can only be taken in the presence of a database. Transparent, accurate data, numbers and statistics that you can build on and make the right decisions, and this can only be done with a well-digitized economic and statistical system.

Digitization also contributes to providing an accurate and wide information base that facilitates the process of accessing the world of investment, knowing the availability of commodities and raw materials for producers, as well as the availability of consumer goods for consumers, as well as helping to identify deficits and imbalances, and tracking the process of commodities to combat monopoly and speculation.

It is not possible to know the path of commodities from the producer to the wholesaler to the intermediaries until they reach the retailer and from there to the consumer, since there was no good digital system, and it is not possible to track the path of these commodities and what may happen on the way is what is called speculation, monopoly, price manipulation and commodity manipulation And this would be a social and economic futility for the state, and that is why it must be fought with digitization.

Accordingly, a ministry specialized in digitization was installed in the hope of facilitating the lives of citizens, putting an end to bureaucracy, and contributing to the advancement of the national economy. And creating a specific digital platform that provides correct data and indicators that lead to appropriate decisions.

The higher education sector knows new digitization platforms to strengthen the higher education management system and facilitate university life at the university level, and at the level of the higher education sector in general, and also develop services and technology for

the benefit of university employees and students by reducing bureaucracy. These platforms would improve the governance of the Algerian university and raise with it.

II. Digitization of the higher education and scientific research sector project:

1 - Reasons for the shift towards digitization of the higher education sector:

There are a number of justifications and reasons that drive the government to seek electronic management applications. A group of developments worldwide, especially with the beginning of the third millennium, has caused the emergence of what has become known as electronic management, which many specialists view as a modern administrative philosophy imposed by the digital revolution and the trends of globalization and democracy, and these factors intensified in providing a number of justifications that called for the shift from traditional management to electronic management, or the so-called digitization in most institutions depending on the changes and challenges of the times, and many researchers unanimously agreed that there are many justifications which called for the shift towards digitization in universities.

They can be summarized as follows:

1. The acceleration of the technological and knowledge revolution that imposed itself on various fields of human life, including the higher education sector.
2. Adapting to the requirements of the environment surrounding the university, avoiding isolation and falling behind in keeping up with the times with its challenges, and thus striving to achieve qualitative and quantitative administrative competence appropriate to contemporary technical administrative thought.
3. Openness and integration between human societies, that openness created by the high intensity of the media through the technological revolution, and attempts to link the members of the human society as a whole through the Internet, cyberspace, and other digital tools (مقراني، 2020،ص 31).

2 - The political and legislative framework for digitizing the higher education and scientific research sector:

It was stated in the “Algeria Electronic Strategy 2013” that the developed countries set themselves proactive public policies for the development of the digital economy, and this is through strong support for the information and communication technologies sector, and this document mentioned the need to develop a clear and coherent strategy that would embody a real information society and a digital economy.

The strategy was developed in 2008 and its implementation period was set at five (5) years (صاري و حلفاوي ، 2021، ص 232).

According to the aforementioned document, the digital economy requires an innovative dynamism fueled by research and development, and this dynamism is more active and feasible in the field of information and communication technologies. The document also noted that these activities are carried out exclusively in public institutions affiliated to two ministries only, while the national regulatory body urges and encourages all public and private sectors to invest in this field. On the other hand, the activities of scientific research, technological development and the formation of human capacities in the field of information and communication technologies remained limited.

The legislative framework for the digitization of the higher education and scientific research sector lies mainly in the legislative provisions included in the laws governing the sector.

Legally, all actions and procedures undertaken by the higher education and scientific research sector in the field of digitization are based on legislative foundations. In this regard, the higher education and scientific research sector is governed by the Higher Education Directive Law of 1999 (First) and the Directive Law of Scientific Research and Technological Development of 2015 (Second) which both contain provisions related to the digitization of the sector.

First - Digitization in the Directive Law for Higher Education:

According to Article 3 of the definition of Law No. 99-05 of April 4, 1999, which includes the Directive Law for Higher Education (Official Journal N24, 1999, P4), amended and supplemented by Law No. 2000-04 of December 6, 2000 (Official Journal N75, 2000, P4).
And Law No. 06-08 of February 23, 2008 (Official Journal N10, 2008, P38), "The public service of higher education, in its capacity as one of the components of the educational system, contributes to:

- Developing scientific and technological research, acquiring science, developing it, disseminating it, and transferring knowledge.
- Raising the scientific, cultural and professional level of the citizen by spreading culture and scientific and technical media."

Second - Digitization in the Directive Law for Scientific Research and Technological Development:

The scientific research and technological development sector is governed by Law No. 15-21 dated 18 Rabi' al-Awwal 1437 corresponding to December 30, 2015, which includes the directive law on scientific research and technological development (Official Journal N71, 2015, P6). The status of digitization is highlighted by some provisions of the law.

As for the objectives of scientific research and technological development in general, Article 7 of the law states the following: "Scientific research and technological development aims to achieve economic, social, cultural, scientific and technological development for the country."

The law defines technological monitoring as follows: "It is a continuous updating process that aims to systematically collect information on scientific and technical gains related to information products, procedures, methods and systems, in order to extract development opportunities."

On the other hand, and according to Article 25 of the aforementioned law, the state is working to encourage the establishment of a national network for technological monitoring and the transfer of scientific and technical information. This task is carried out by the Ministry in charge of scientific research, with the participation of the relevant ministerial departments. It also takes all necessary arrangements to allow researchers to access and obtain international scientific and technical information resources, on the one hand, and to encourage cooperation between sectors and international cooperation in the field of scientific research and technological development, on the other hand, and this is in accordance with Article 26 of the aforementioned law. For reference, in this case the state is represented by the ministry in charge of scientific research and the relevant ministries, as confirmed by law (بن عبيد ، 2019، ص 25).

III. The institutional framework for the digitization of higher education and scientific research

The policy of digitizing the higher education and scientific research sector is implemented by the institutions affiliated with the sector. The institutional framework for the higher education and scientific research sector consists mainly of the Ministry of Higher Education and Scientific Research, and a number of institutions that have powers in the field of digitization.

1 - Digitization is within the powers of the Ministry of Higher Education and Scientific Research

The Minister of Higher Education and Scientific Research has several powers related to areas mainly represented in higher education and training, scientific research, technological development, scientific and technical information, information system and documents. In the field of digitization, the organization defined a set of powers for the minister (first) and provided the ministry with the Directorate of University Networks, Information and Communication Systems (second).

First - Digitization within the powers of the Minister of Higher Education and Scientific Research:

The Minister of Higher Education and Scientific Research has several powers stipulated in Executive Decree No. 13-17 dated Rabi' al-Awwal 18, 1434 corresponding to January 30, 2013, which defines the powers of the Minister of Higher Education and Scientific Research (Official Journal N8, 2013, P4).

a - General authorities:

In the field of higher education, the Minister of Higher Education and Scientific Research is generally charged with studying and proposing the necessary measures to organize and develop the various phases of higher education, in order to establish a comprehensive and integrated system for higher education and training, in accordance with Article 3 of the aforementioned decree.

b - Authority in the field of documents:

It ensures the formation of a diverse documentary stock that is placed at the disposal of students, professors, and permanent researchers. It prepares a policy and lays down plans for the development and computerization of the university library network, and ensures its implementation. It also promotes university textbooks and university documents for the benefit of students (حماد، 2007، ص 33).

c - Authority in the field of pedagogy:

Helps develop effective pedagogical approaches, and supports businesses to encourage the development of audiovisual methods and means.

d - Authority in the field of scientific and technical education:

Contribute through training, demonstration, information and sensitization to the expansion of scientific and technical progress to all fields of society.

e - Authority in the field of scientific and technical information:

Envision and implement a coherent scientific and technical information system.

- Takes the initiative to lay the foundations for data banks necessary for the work of scientific research and technological development.
- Encourages and supports work related to the preparation and publication of scientific and technical documents and publications necessary for scientific and technological development.
- Advancing the creation and development of specialized scientific and technical journals.

Second - Direction of University Networks, Media and Communication Systems:
Executive Decree No. 13-78 of Rabi' al-Awwal 18, 1434 corresponding to January 30, 2013, which includes the organization of the central administration in the Ministry of Higher Education and Scientific Research(Official Journal N8, 2013, P8), as amended by Executive Decree No. 14-22 of Rabi' al-Awwal 21, 1435 corresponding to January 23, 2014 (Official Journal N5, 2014, P9), determined the ministry's structures and tasks. These structures are as follows:
- General direction of Higher Education and Training.
- The General direction of Scientific Research and Technological Development, which is governed by a special text.
- Direction of Cooperation and Exchange between Universities.
- Direction of University Networks, Media and Communication Systems.
- Direction of Development and Foresight.
- Direction of Legal Studies and Archives.
- Human Resources Direction.
- Direction of Budget, Means and Management Control.
- Direction of improving students' life framework and revitalization in the university milieu.

In terms of organization, the Direction of University Networks, Media and Communication Systems constitutes the specialized structure in the field of digitization (1). This direction includes four (4) sub-directions, which are the sub-direction of infrastructure and networks (2), the sub-direction of information security (3), the sub-direction of information systems (4), and the sub-direction of knowledge support systems (5) .

IV. Definition of the "Progress" platform, the focus of the digitization strategy of the higher education and scientific research sector:

The Ministry of Higher Education and Scientific Research has worked within the framework of modernizing the administration and keeping pace with the change in the public administration environment, trying to upgrade an administrative model that is in line with the objectives of the system of higher education and scientific research, as it is possible to start from the importance of information and communication technology as one of the basics of electronic administration, and to highlight its role in the field of education, scientific research and training, as it is a clear trend to improve the services provided to students and professors, by linking many universities. In addition to providing a network of new training methods.

Within the framework of developing and modernizing the administration within the university, a platform for physical and human structures has been developed that includes all information and data in it. It is called (Progress), and it is the result of a partnership between the Ministry of Higher Education and the European Union.

This platform is an information system that enables a comprehensive management of all university affairs, and this appears in , for example, but not limited to (عاشور ، 2010):

- Registering new students, directing and transferring them.

- Giving the student an account that follows him throughout his academic course and informs him of all his educational matters.
- Comprehensive memorization of the student's academic path.
- Formulation of time distribution programs and hourly volume for professors.
- Managing the deliberations process.

To get more acquainted with this platform, we will try to elaborate on the following elements:

1 - Progress System Content:

It is a digital platform for the management of the higher education sector and is divided into a group of platforms:

A. Formation and student life (all pedagogical processes, registration, transfer, master's, doctoral registration, deliberations, reservation of points).

B. The management of human resources .

C. Financial management and accounting.

2 - Entry into service of the Progress system:

This system appeared through the Ministry of Higher Education in partnership with the European Union. It was used for the first time in five universities, namely: (Oran, Sidi Bel Abbes, Constantine, Blida, Algeria 1). Then it was circulated to all universities.

3. The reasons for establishing this system:

- The necessity of digitization and keeping pace with the Algerian government's digitization project.
- Keep pace with technological changes (تركي ، 2019، ص 52).

V. Contributions of the "progress" in improving the performance of services in the higher education and scientific research sector

The Algerian University is counting on this platform to be a comprehensive information system that provides an integrated database on students and professors.

First: the importance of the progress platform and its uses

Progress is an information system aimed at communication between the administration, students and professors. It carries all personal, pedagogical and administrative data, structures and equipment (students, teachers, administration).

Its most prominent uses are:

- The section for students includes several contents and data from the moment the student obtains a high school diploma until he graduates from the university and obtains a graduation certificate. It also contains all registrations such as accommodation, scholarship, transfer, even transfer from one major to another, or from one university to another, exam programs, monitoring of scores and grades, as well as master's registrations, results and entry entries for doctoral competitions and their results, as well as internships and grants for doctoral students and academic holidays for students.
- The part dedicated to professors includes important data for professors, the most important of which are: academic degrees, academic research, long and short-term internships, financial and social security, employment competitions and academic holidays.
- As for the administrative aspect, it includes physical structures and equipment such as halls, offices, laboratories, office equipment, and the administrative and technical staff

working in the university administration. It also contains the personal and important data of each employee.

Second: The contribution of the"Progress" platform to the development of administrative work:

The platform contribution to the university:

1- Ease of exchange and administrative correspondence.

2- Reducing the time for correspondence with the Ministry.

3- Facilitating some pedagogical processes for the student, "electronic registration" and electronic transfers at the level of the university's website.

Conclusion:

Digitization in the higher education sector represents a crucial stage in the transition towards electronic communication and the shift from direct communication based on papers to virtual communication through various electronic networks. It proceeds from the optimal use of various devices and equipment to provide solutions to existing complexities and problems. The Progress platform had an effective role in embodying the trend towards digitization of the higher education and scientific research sector, as it provided capabilities that allow rapid response to the requirements of managing services and activities related to the university individual.

It has become necessary for public relations to enter the stage of applying administrative digitization to upgrade the activities and tasks of universities, which clearly contributes to defining the image of the university institution, improving the image presented, and establishing an effective communication process based on mutual trust between those concerned with university service and administration.

The Progress platform is also a platform for the management of the higher education sector. It is one of the systems that is aware of the full human and financial resources of the university, including students, professors and workers.

Research results:

- Digitization represents an important mechanism in building and upgrading an integrated system of electronic public services, which contributes to achieving integrity, transparency, accountability, accountability, oversight and speed of response in services provided to the public, and raises the level of quality of public service.
- Digitization is a new alternative that reconsiders the relationship of the individual with government institutions, and the transition to virtual links, in a way that improves the speed of response and the level of effectiveness of government agencies and organizations during the performance of public services;
- Digitization in Algeria is still in its early stages, but this did not prevent its rapid spread and use.
- Progress clearly contributed to the speedy completion of tasks and the reduction of many previous practices that were dominated by the bureaucratic nature, thus achieving better results in the professional work environment and reaching the desired goal, which is to improve the level of university administration, reduce the workload on the administrative employee and satisfy the recipients of the service.

Suggestions:

To achieve access to the digital world in an effective and flexible way, the Algerian government, in its sector, the Ministry of Higher Education and Scientific Research, must take into account a number of points, the most important of which are:
- The project to transform from traditional management to electronic management must have a comprehensive vision, starting from the highest levels in the country to the lowest, through concerted efforts, within a clear long-term strategy;
- Providing advanced computers, secure and high-tech systems and networks to keep pace with the rapid development in the world in the field of information technology, with adequate preparation and training of employees to use them;
- Holding training courses in the field of digitization for all employees to explain the concept of digitization to them in order to increase their contribution to the success of the digitization process;
- Taking tax measures that encourage the use of information and communication technology by encouraging individuals and institutions to use the Internet and automated information, by subjecting them to a low tax rate on the value-added tax;
- Increasing the financial support allocated for holding lectures, research and training programs in the field of digitization, in order to deepen awareness of the concept of digitization;
- Algeria needs to activate a legal arsenal to secure its electronic transactions and protect customers through electronic networks.

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