



*Practical experiences in digitizing the higher education
and scientific research sector*

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Abstract ;

Enter This study aimed to identify the process of applying digitization in the higher education sector Progress platform in the registration of doctoral students in an old system and a new system as a model at the Faculty of Humanities and Social Sciences, Badji-Mokhtar University of Annaba, and to identify the difficulties that students faced in using the platform, we relied on the descriptive method and the use of quantitative and qualitative analysis in analyzing field data to answer the questions of the study that was conducted on a purposive sample of 58 doctoral students.

Article info

Received
March 11 ;2024
Accepted
April 18 ;2024

Keyword:

- ✓ Digitalization
- ✓ Progress
- ✓ PhD student

1. Introduction

The digital transformation of data and information in all sectors and the Ministry of Higher Education and Scientific Research has become of great importance, where it can be stored, processed and shared, especially for coordination between several sectors or within the same institution using digital technology, with the possibility of converting paper documents into electronic files. Thirty-five (35) digital platforms have been launched out of 42 programmed digital platforms, in line with the sector's digitization strategy, which is part of the implementation of the instructions of the President of the Republic. To this end, several digital platforms have been launched, including the platform dedicated to the unified electronic network that will enable the provision of services to nearly a quarter of a million employees in the sector, the platform dedicated to the authentication and certification of school documents for all graduates since independence, and the e-portfolio platform adopted by the Ministry to achieve the goal of "zero paper".

2. Problematic

Algeria is among the countries that have tried and are now trying hard to catch up with technologically advanced countries by adopting the idea of digitizing the higher education sector, in order to ensure the good management of the sector by taking spaced and gradual steps because

the matter requires experience and training for administrators and officials in the sector before integrating the student in the digitization process and achieving the self-inclusion of information within the framework of the implementation of Resolution No. 134-21 issued on April 07, 2021, which includes the organization of the central administration of the Ministry of Higher Education and Scientific Research, and the adoption of the Digital Steering Plan (SDN) for the higher education and scientific research sector, which runs from November 2022 to December 2024, which aims to develop the digitization of higher education through seven main axes, namely:

- Digitization to support teacher training
- Digitizing training offerings
- Digitization to support student success
- Digitization for research activities
- Digitization to support permanent infrastructure
- Digitization to support a modern administration
- Digitization in the field of national and international university exchange.

In every type of government service (land registry, health insurance, veterinary inspections, etc.), these technologies can be expected to replace previous production methods. In the same way as in

the case of e-filing, the arrival of these new technologies will accelerate and simplify the service for the user, and lower the cost of production. These are process innovations: technology makes it possible to lower the production costs of public services or improve their quality, without altering their nature, at least in the short term. Digitization is the process of converting data into a digital form, in order to process it by computer. Digital transformation offers many benefits and forms (Yaqtin, 2005), as it saves a lot of effort and money significantly, as it has great advantages in improving the efficiency of work and operation and helps improve quality and simplify procedures to obtain services provided to beneficiaries (Mehri, 2005). Privacy is another advantage of digitization. A study on the disparity in women's and men's access to unemployment benefits shows that the shift to online allocation has increased the uptake of the benefit among women: The automatic application of the allocation rule and the resulting calculation of entitlement would reduce the selection or self-censoring effects associated with the fear of discriminatory treatment at the counter (Wenger J. and V. Wilkins, 2009). we can say that the practical beginnings were during the spread of the health epidemic. Whereas state institutions had to adapt to the necessity of social distancing by conducting many transactions digitally or remotely, the Algerian university adopted

online teaching to catch up with the ministerial study program to include points and evaluate students through the digital platform (progress). A platform that was later developed to include many transactions that were used not only to facilitate many university services, but also to improve the quality of the higher education sector by creating a space for the university professor and another for the university student, namely:

- Student Portal: A platform to change student specializations, student directions, and consult on the results of assessments.
- Managing foreign certificates: A platform for registering foreign and Algerian students who hold foreign degrees.
- Notarization of certificates: Specialized in documenting university degrees.
- Doctoral Registration: A platform for doctoral student registrations for both science and third-stage systems, as well as for announcing doctoral projects.

University services platform: The management of accommodation requests, scholarships and transportation. However, Algeria remains somewhat slow in relation to other countries in the field of digitization for several reasons, including poor Internet flow, and the delay in the will to go digital to modernize the sector, this inevitably negatively affected the university student and from this door we

would like to know the student's attitudes towards digital orientation by answering the main question:

How have doctoral students interacted with the digital platform Progress in their registrations for the academic year?

Sub-questions include:

- Did the student face difficulties in using the platform in their registration?
- Were they self-reliant or did they have a companion in their registrations?

3. Objectives of the study

Our study aims to:

- Attempting to show the importance of digitizing the higher education and scientific research sector and uniting the Algerian state with other countries that have distinguished themselves by improving the quality of scientific research and university services in general.

4. Significance of the study

As any scientific research seeks to add new knowledge in the field of scientific research or to update old knowledge, our study came to add some knowledge in the field of the higher education sector's use of the Progress platform as a step to digitize the sector in many areas.

5.1. Digitization concept:

To understand the variables of the study, we tried to present several concepts

that attempted to give a clearer understanding of the concept of digitization

Doug Hodges introduces another concept adopted by the National Library of Canada, in which he considers digitization as a procedure for converting intellectual content available on a traditional physical storage medium such as periodical articles, books, manuscripts, maps, etc. into digital form. (Faraj, 2009, pp. 8-11), and Abeer Salama refers to digitization as the process of converting an image or signal into a separate set of points, values to be a digital copy of a visual, printed or audible source, as she explained that digitization is analog (Benkahla, 2018, pp. 2-8),

There are several definitions of digitization, including that it is a process of high-end reproduction that enables the transformation of a document of any kind and its documents into a digital series. This digitization work is accompanied by intellectual and clerical work to organize post-information in order to index it, tabulate it and represent it in the content of the digitized text (Lemine Zaidi).

Digitization is the central method of making digital representations of various contents, storing images and creating electronic diagrams by digitizing traditional paper documents, graphs or images (Kadir, Abdullahi Nimota Jibola and Tijani Abdulganiyu Adebayo, 2019)

5.2 Defining the digitization of higher education

Before addressing the definition of the digitization of higher education, we will stop on its definition in the educational process in general before progressing to its definition in higher education procedurally, as digitization in the educational process as defined by Abdul Baqi Al-Moneim Abu Zeid is: "Everything that is used in the teaching and learning process from information and communication technologies, which are used with the aim of storing, processing, retrieving and transferring information from one place to another, it works to develop and improve it by all modern means, such as computers and their software, the Internet, e-books, databases, encyclopedias, periodicals, educational websites, e-web, voice mail, e-learning, distance learning, interactive video, multimedia, digital libraries, CDs, satellite television broadcasts, and virtual classrooms(Imsael Mihoubi,2021).

6. Methodology of the study

The concept of method refers to the way or method that the researcher follows in studying the issue of the research topic, and it answers the interrogative word: How?"(Abdelbasit, 2001),In this study, we relied on the descriptive method to interpret the data of the study(Aliyan,2001), as it is one of the most important methods used in social and

humanitarian research, as it is one of the most important methods used in social and human research.

While we adopted the questionnaire as a tool that included between closed and open questions divided into five axes distributed to a purposive sample of 87 doctoral students in the Department of Sociology and Demography from the two systems (doctor of science and third phase), through the official page of the department between November 15, 2023 and November 20, 2023 via e-mail to each student, only 58 of the sample members responded, as most students are not users of social networking sites, especially (Facebook).

7. Results of the field study

7.1. Characteristics of the study sample

Table 1. Characteristics of the study sample

Gender of the study sample	67% male	43% female
distribution of the study sample according to the education system	35% Doctor of Science	75% third stage
Average age of the sample by education system	53 years	34 years

Most of the members of the sample are students of the old system with a master's degree, where employment in many sectors was based on a bachelor's degree or less in Algerian administrations, and employment in the Algerian university a

master's degree was sufficient, so those who obtained this degree most of them did not pay attention to discussing the doctoral thesis since they are employees, not to mention the social responsibilities and obstacles to publishing the scientific article.

7.2. Respondents' answers about their competencies in media technology

Table 2. The extent of the respondents' mastery of media technologies

Control of media technology	Accuracy
Technology Control	%79
No technology control	%21
Total	%100

Problems in the use of information and communication technologies faced many doctoral students for the old system in particular, and this point is counted for the students of the new system (third phase), and this reality is felt by everyone who dealt with this group that was characterized by the combination of the ability to search for information and the good use of electronic platforms (Moodle, Zoom, Progress) trying to overcome all

difficulties that prevent them from being able to defend their thesis in record time to win the position as a university professor or advance in their positions, Another advantage is the creation of a space where

they can share any ideas or any issues they encounter: Not opening their account on

the Progress platform (21% of the sample), other difficulties encountered

when opening the account, what data is included through stages, as well as the payment system for registration rights.

- Another point that students encountered was the appearance of many advertising flashes
- The difficulty of determining whether the registration process was successful or not, especially since the student is

obligated to enter his information only and the rest of the information is handled by the administration, thus requiring the student to confirm by contacting the responsible body, as well as with the change in the method of payment of registration dues, where a special platform for this (Progress epayment), which is a good way to avoid going to the university in light of the administration's commitments to other tasks.

7.3 Respondents' answers about the use of the Internet

Table 3. Respondents' use of the Internet

Using the Internet	Accuracy
Uses	76%
Do not use	24%
Total	100%

The results indicate that the majority of the study population subscribes on a monthly basis to take advantage of Internet offers from different phone segments, especially the youth, who are interested in what social media platforms offer, especially where lack of internet access or interruption of internet access is a major concern for this group, whose average age, according to the sample, is 33 years

between the [28-34 years old] category, this made them technologically

empowered and follow all the new things and thus they are proactive in registering on the Progress platform, but the remaining group does not care much for several reasons, including family responsibilities, the high cost of recharging the monthly balance and not having an advanced cell phone that enables them to benefit from the Internet offers, and thus this makes them not following all the new technology and makes it difficult for them to access the Progress platform.

7.4 Respondents' answers on whether they rely on themselves or others for their registrations on the platform

Table 4. How to access the Progress platform

Accreditation in registrations	Accuracy
Self-reliance	78%
Dependence on others	22%
Total	100%

Older age of doctoral students, especially cohorts whose registrations are over 20 years old, Some of them retired and their health condition deteriorated (02), and the lack of a companion, one of them, due to her health condition, was not defended despite fulfilling all the conditions for defense (completion of the thesis and publication of the article).

According to the student himself, the administration had to take over the task of registering them so that the student could defend the thesis later, but the rest of the data required in the registrations posed a difficulty for the administration because they did not

have them and thus required a lot of time, If we look at the average age of 53 years, of which 12% exceeded the age of 60 years, compared to the second category is somewhat younger 34 years, not age, but family responsibilities and diseases of the age that often burdened this category, relying on Internet cafes among the mechanisms that facilitated student registrations for the lack of Internet flow in homes as well as comrades accompanied most of them the group that is unable to do so.

7.5 Respondents' answers about the platform's language

Table 5. The issue of the language used in the platform

Language proficiency	Accuracy
Arabic	100%
French	56%
English	58%

The language of the platform did not constitute a major obstacle in student registrations, especially since the platform's language combined Arabic, French and English, and therefore students did not have a major obstacle to registration as some data had to be

included in the foreign language, such as the name and surname of the student and his place of birth, the title of the thesis to make it more readable and accessible, the thesis director and the affiliation institution.

Indeed, most students were able to acquire new linguistic and technical terms while entering the required data at each of the stages, but virtually 100% of students are able to enter the required data in Arabic, between 56 and 58% are proficient in French and foreign languages, especially the category of students of the old system due to the fact that most of them worked and work in administrations from the remnants of colonization, but with the adoption of English as an alternative language to the French language according to the decision of the Algerian authorities .

Since the 1990s, English has been the language of 90% of most fields of scientific research, and in 2010 the English language education industry became a global industry with revenues of \$50 billion a year. English is a native language for about 380 million people, a second language for an equal number, a foreign language for about 800 million people, and is spoken - to

varying degrees - by more than two billion people in 120 countries, according to Montgomery, the future of science is inseparable from the language.

According to Montgomery, the future of science is inseparable from language, Montgomery also sees the choice of the English language as a favorable choice by the international community and the scientific research environment in the twenty-first century. The researcher selects individual and collective examples to refute the claim of multilingualism in our cosmic moment, as modern science needs a universal language (English) for its growth and progress, expanding the circles of cooperation between researchers, and benefiting from knowledge communication in all fields.

7.6 Respondents' responses on the features of the Progress platform and the digital transformation of the higher education sector

Table 6. Students' attitudes towards digitization

Students' attitudes towards digitization	towards	
	yes	No
Is digitization in the education sector a positive step?	89%	11%
Do you see any shortcomings that need to be addressed?	87%	13%
Has digitization facilitated the registration process?	92%	8%

The focus of the respondents was on some of the points that they consider essential, the most important of which were:

The doctoral student had fears and anxiety that the majority of students had as a first experience of adopting this digital method of registration, where contacting the administration was essential and inquiring about the method of opening an account in

the platform and the steps and information that must be included in the platform.

The majority of respondents consider that the doctoral student's file has become more readable and has the ability to make some changes in his file, especially after changing the supervision or amendments related to the title of his thesis, involving he student and making him the main responsible for the data included with the possibility of confirming some information such as his specialization, The possibility of tracking the trajectory of his file until it is discussed, Digital technology also improves service quality by making public action more transparent. (Andersen, 2009).

The doctoral student faced issues of uncertainty about registration, especially after changing the method of registration after the adoption of the 0

paper policy and the method of payment of registration dues, for which the ministry included a special platform for that, the students unanimously agreed that this step was positive in terms of reducing the suffering of traveling to the university, especially for those working in other sectors .

8. Summary of study results

The study found that the Ministry of Higher Education's adoption of the Progress platform for the registration of doctoral students is a good step to improve the administrative aspect and reduce the student's burden in traveling and inquiring about registrations and following his academic path until he defends his thesis and obtains his doctoral degree, according to the majority of the students questioned in the questionnaire, but the mechanism was new to them and therefore the registrations were for some posed difficulties for several reasons and easy for the majority who are good at using information technology, although they received some difficulties related to:

- Poor internet connection, which was an issue for the majority of students.

- Email inactivity is a big issue for many students, especially when their account is locked or they forget their password, requiring them to create a

new account to activate their Progress account.

- Failure to check the student's e-mail daily .*
- Changing the email address and phone number without notifying the administration, which makes it difficult to communicate with the student or verify whether he can register or not, especially with the limitation of the registration period for a certain period of time.*
- Many PhD students relied on accompanying friends or family members to register them, especially the elderly, and those who were over 20 years old due to their deteriorating health condition and their ignorance of the basics of computerized media.*
- Many students had trouble using the Progress platform due to their poor use of ICT.*
- Another point that the students faced was the appearance of many advertising flashes*
- The language of the platform did not constitute a major obstacle in the students' registrations, especially since the platform's language combined French and English, but the students were able to .*

9. CONCLUSION

The study concluded that the digital transformation in the field of education and scientific research led to shortening the time and reducing the cost of transportation and the expenses of paper copies for students in particular and achieving greater flexibility and efficiency in the registration process, not to mention achieving zero (0) paper and this in itself is a precedent for the Ministry of Higher Education, which indicates that digitalization is considered one of the modern mechanisms to reconsider the pedagogical activity on the one hand and the scientific activity on the other hand.

Digital transformation is one of the most important drivers and catalysts of growth in major organizations and sectors, including the higher education sector, and training on technological media is very important, especially since we are dealing with accounts that do not accept false information, this is what made the university family attach great importance to the Progress platform, as well as for students and officials ,

Despite the positive effects achieved by digitization in the higher education sector, there are still some obstacles that dwarf the effectiveness of the digital space in Algeria in general due to several indicators that point to the lack of interest in activating the various

digital programs and platforms that remained merely a space without any monitoring by the authorities. This defect is part of the idea of the lack of digital culture in Algeria in general and the university space in particular, due to the citizen's ignorance of the modern technologies used by digitization, especially the use of computers and Internet networks, in addition to the lack of interest in training professors.

10. Recommendations Based on the above findings, the following can be suggested:

1. The necessity of providing the necessary technical infrastructure for the development of digitization in higher education, including the provision of high-speed internet and the necessary devices for professors and
4. The need to pay attention to data protection and privacy in the use of digital technologies in higher education, and incentivize work to improve and develop these technologies to meet the needs of higher education in the future
5. Organize open workshops to raise awareness of digital transformations and convince others to integrate.

students in a dedicated space so that the student or professor can use the platform high-speed internet and the necessary devices for professors and students in a dedicated space so that the student or professor can use the platform.

2. The need to create trained technological competencies to accompany students and professors alike to save time and effort and increase flexibility in the educational process.

3. Curricula in Algerian universities must be modernized and use modern technology in educational materials, to provide a comprehensive educational experience that is valid for the present and the future.

11. Bibliography List :

- Al-Mughrabi, M. K. (2009), *Scientific research methods in the humanities and social sciences*, Amman, Dar Al-Thaqafa for Publishing and Distribution.
- Andersen T. (2009), « E-Government as an Anti-Corruption Strategy », *Information Economics and Policy*, n° 21, pp. 201-210.
- Ahmed Farag Ahmed (2009), *Digitization inside or outside information institutions, a study in the issues and testing criteria*, *Journal of Information Studies*, Issue 1, p. 04.
- Ben Kahla (2018), *The role of e-administration in the digitization of civil status records, a case study of the municipality of Chetmeh, Biskra*, Master's Degree in Information and Communication Sciences, Mohamed Khaider University Biskra.
- Hassan, Abdelbasit (2001), *Fundamentals of Social Research*. Cairo: Wahba Library.
- Kadir, Abdullahi Nimota Jibola and Tijani Abdulganiyu Adebayo (2019), *Digitization in education system and management of Early Childhood Care* 30 « Education in Nigeria ».
- Imsael Mihoubi, Rabie Samia(2021), *Permanent and continuous pedagogical renewal in the Algerian school as a mechanism to improve the educational process in the era of digitization*, *Brahimi Journal of Arts and Humanities*, Volume 2.
- Lemine Zaidi, *Digitization of the educational process in the Algerian educational system*, *Adwa Journal of Customary Linguistics and Language Learning*, Vol. 1, No. 2, p. 33.
- Mustafa Aliyan (2001), "Scientific research, its foundations, methods, techniques and procedures", *Balqa University, Jordan, Dar Al-Akhfar International*, T, p. 48.
- Said Yaqtin, *From text to text, an introduction to the aesthetics of interactive creativity*, Beirut, Arab Cultural Center, 2005, p. 21.
- Souhaila Mehri, *The Digital Library - A study of the reality and future aspirations - Master's thesis*, Faculty of Humanities and Social Sciences, Constantine, 2005, pp. 83-84.
- Wenger J. et V. Wilkins (2009), « At the Discretion of Rogue Agents: How Automation Improves Women's Outcomes in Unemployment Insurance », *Journal of Public Administration Research and Theory*, vol. 19, n° 2, pp. 313-333.