The Algerian School and the Digital Environment: Implementation Mechanisms and Implementation Barriers

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Abstract:

This article aims to explore the Algerian experience in the process of digitizing primary schools, highlighting the positive and negative aspects resulting from this implementation. It also identifies the obstacles faced in the digital experiment within Algerian schools, offering a future vision through proposing a set of suggestions and recommendations that may benefit educational stakeholders and decision-makers alike. One of the key recommendations is to focus on the training of administrators, educators, and educational officials in schools, central and decentralized administrations, to enable them to effectively utilize digital technologies. Additionally, accelerating the completion of the Ministry of Education's project, initiated in 2018, which aims to connect all educational institutions to the Alcom sat1 satellite dedicated to the digitization process.

 key words: Digitization of the Education Sector, Algerian School, Digital Environment.

Introduction:

The progress and development of nations today are measured by the status of education within their societies, and the school is considered the cornerstone and fundamental platform for any developmental endeavor. In Algeria, the education sector has seen dynamic vitality in the introduction of modern technology in all its institutions to keep pace with countries experiencing significant advancements in educational outcomes. This situation has presented the Algerian school with two choices: either adapt and continue progressing or decline and vanish. Consequently, the Ministry of National Education adopted a strategic choice, implementing a policy of digitizing the Algerian school and focusing on the digitization project since 2015. Moreover, in a subsequent phase, they initiated a

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project to connect all educational institutions to an Algerian-made satellite, Alcom sat1, fully manufactured by Algerian expertise since 2018. However, this project is still in its early stages.

Through the preceding context, the following questions arise:

- What aspects have been digitized within the framework of the Algerian experience?
- What are the main obstacles to implementing this project?

Before delving into the depths of this article, it is essential to clarify and dispel any ambiguity regarding the key concepts mentioned below.

➢ **Algerian School:** An educational institution where students learn various subjects and receive education and training to prepare individuals for life. There are both government-run and private schools. The guiding principles and functions of the modern Algerian school are detailed in the Educational Guidance Law issued on 23/01/2008.[1]

➢ **Digitization of the Education Sector:** The process of utilizing information and communication technology in the management of various administrative entities within the education sector. It also involves assigning an identification number to each institution, employee, and student affiliated with the Ministry of National Education, creating an electronic file containing all relevant information for these entities, employees, and students.

➢ **Digital Environment:** An environment that utilizes digital technology, including information and communication technology, for various electronic applications, which helps save effort, time, and money, resulting in a digital society.[2]

THE FIRST TOPIC: The Algerian Experience in Digitizing Schools:

FIRST REQUIREMENT : The Educational and Administrative Aspects That Have Been Digitized:

The Algerian experience in this field started, and it is still in its early stages. The first step towards digitizing the education sector took place in 2015 during the tenure of the former Minister, Ms. Nouria Benghabrit. The Ministry opened a dedicated link that allows access by entering the username "ID" and the password "MOT DE PASSE."

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[1] Title: "The Treasures of the Algerian and Arabic School 2019" Article retrieved on: October 14, 2022 Link: [https://www.nfaes.net/134.html]

[2] Algerian Ministry of National Education - 2018 Statistical Notebook for the School Survey - Middle School Level

Figure 1: Represents the login interface to access the digitization website of the Algerian Ministry of National Education.

The above figure represents the login interface to access the digitization website managed by the special office of digitization under the Algerian Ministry of National Education. To enter the website, one needs to use a login ID and password, which are personally assigned to the school principal or the person responsible for digitization at the educational institution. The login credentials are handed over in a sealed envelope, emphasizing the ministry's meticulous approach to this process.

Each primary, middle, or high school has its unique login ID and password, allowing the school principal or the digitization coordinator to change the password later, ensuring the confidentiality of the educational institution's data.

To access the digitization website, follow these steps:

➢ Visit the following link: [https://amatti.education.gov.dz/]
➢ Enter the name of the educational directorate in the province.
➢ Input the username, password, and verification code.
➢ Click on the "Login" button.

By following these steps, one can access the website, which is dedicated to managing the National Education Ministry's digitization process.

One of the most significant aspects that have been digitized so far is the digitization of files for administrative staff, educators, and students. This process involved assigning unique identification numbers for teachers, staff, and students, enabling parents to access their children's academic results and behavioral records remotely without having to visit the educational institutions where they study.

The Ministry took great care in filling out special forms for the employees and teachers in the sector, as well as the students, in order to record information at the level of the educational directorates. These forms were distributed to various educational institutions and contain comprehensive details about each employee, such as their date of entry to the institution, marital status, qualifications, seniority in rank, and years of service. This will facilitate management and help prevent errors that may occur during the promotion processes of employees.

The digitization process was extended to students in all three educational levels, where they were provided with forms containing various personal information, such as their academic level, the names and occupations of their parents, the number of siblings, physical and medical conditions, including blood type, and whether the student suffers from any illnesses. This information facilitated the authorities' handling of sick students and those with special needs. The form also includes information about a grant of 5,000 Algerian Dinars, indicating whether the student is eligible for it. This aids in the fair distribution of the grant to deserving students and helps determine the eligibility for free school textbooks.

As part of these measures, a unique identification number was granted to each employee in the sector, including teachers, administrators, support staff, and students. Through this identification number, parents can access their children's academic results, behavior records, and teachers' observations without the need to visit educational institutions.

The digitization process allowed dealing with identification numbers rather than individual people, ensuring transparency and efficiency in operations. Every document related to users now carries this identification number, similar to a postal account number.

The digitization of the education sector is part of the government's program to incorporate information and communication technologies with the aim of "improving public service."

Figure 2 represents pages 1 and 2 of the student information form.

The previous figure represents the student information form, in which all the student's personal details are included, such as civil status, social status, health condition, and academic status. This results in the creation of an electronic file for each student containing all the aforementioned information. This facilitates access for parents to review their child's academic status, including the number of absences, academic results, request for school certificates, or providing justifications for their child's absence, along with other means of communication with the school administration.

Regarding the employee file, the Ministry has also designated an information form that includes all the specific details of the employee. The following figure illustrates an example of this form.

الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التربية الوطنية

صورة شمسية
خلفية بيضاء

مديرية التربية لولاية : ....

اسـم المكتب : ....

المسير : ....

استمارة ملف موظف

الحالة المدنية:

الاسم ....   اللقب ....

الاسم باللاتينية ....   اللقب باللاتينية ....

الجنس ذ أ   الحالة العائلية/   متزوج(ة)/   أعزب(ة)   مطلق(ة)   أرمل(ة)

اللقب الأصلي للمتزوجات ....   اللقب الأصلي للمتزوجات باللاتينية ....

تاريخ الميلاد ..../..../........   مفترض نعم لا   رقم عقد الميلاد

نوع عقد الميلاد   عادي   مكرر Bis   مكررا ter 1   مكرر 2 Quart 2

سنة التسجيل في سجل الولادات   رقم السجل   مولود بالخارج نعم لا

مكان الميلاد ....   مكان الميلاد باللاتينية ....   بلد الميلاد ....

ولاية الميلاد ....   دائرة الميلاد ....   بلدية الميلاد ....

الجنسية ....   مزدوج الجنسية: نعم لا   الجنسية الأصلية ....

اسم الأب ....   اسم الأب باللاتينية ....   لقب الأم ....

اسم الأم ....   لقب الأم باللاتينية ....   اسم الأم باللاتينية ....

عدد الأولاد   أكبر من 10 سنوات   المتمدرسين   عدد المتكفل بهم

ذوي الحقوق نعم لا   الخدمة الوطنية : مؤداة / مؤجل / معفي/ غير معني

وثيقة الوضيعة الخدمة الوطنية ....   بتاريخ ..../..../........   فصيلة الدم   القدرة البصرية

المعلومات الشخصية :

رقم ح.ج.ب ....   المفتاح ....   حساب آخر ....   الوكالة ....

رقم الضمان الاجتماعي ....   رقم التعاضدية ....

العنوان ....   للرمز البريدي ....

الولاية ....   الدائرة ....   البلدية ....   للهاتف الثابت ....

الهاتف المحمول ....   البريد الإلكتروني ....@..............

الباب المالي : ....   الرتبة

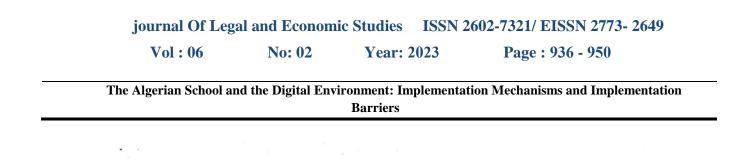**Figure 3 represents page 1 of the employee information form.**

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The employee is required to submit a physical file to the administration of the institution where they work, which consists of the following documents:

➢ Birth certificate (Certificate No. 12)
➢ Father's birth certificate (Certificate No. 12)
➢ Mother's birth certificate
➢ Two recent passport-sized photos with a white background
➢ Certificate of marital status (as applicable)
➢ Civil status certificate
➢ Copy of the social security certificate
➢ Copy of the blood type card
➢ Canceled postal receipt
➢ Copy of the enrollment card in the National Mutual Aid Association for Educational Workers
➢ Copy of the union membership card
➢ Copy of the exemption from national service or deferment certificate (Evidence of the use of the digitization platform of the education sector, 2015)[1]

Additionally, the process of digitizing the structures of educational institutions has been completed, including details such as the type of construction (solid or semi-solid), the number of classrooms suitable for study, laboratories, workshops, IT rooms, administrative offices, schoolyard, the number of IT devices for staff and students, sports hall, school restaurant hall, and other components of the educational institution's structure. This information is recorded annually through a statistical survey conducted by the school principal's secretariat at the beginning of October each year. Previously, it was done manually, but starting this season, it will be activated electronically and sent via email to the Programming and Monitoring Department as a first step in this direction.

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[1] Algerian Ministry of National Education - 2015 The First Guide for Using the Digitization Platform of the Education Sector. Version 1, issued on December 6, 2015.
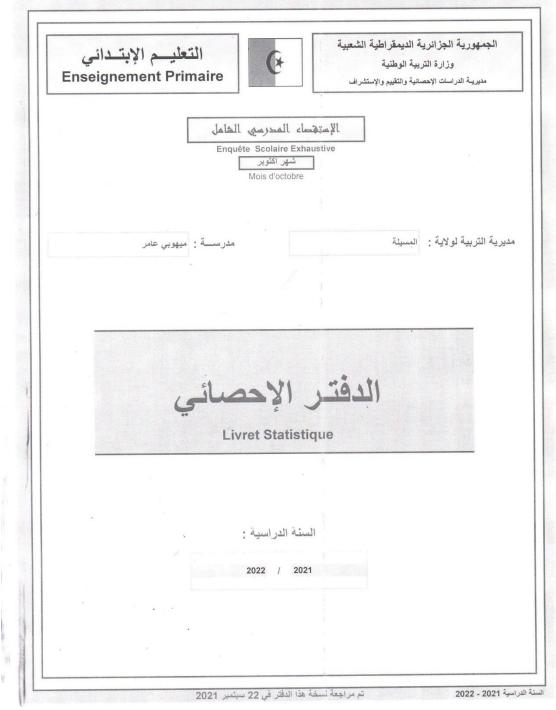
الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التربية الوطنية

مديرية الدراسات الإحصائية والتقييم والإستشراف

التعليـــم الإبتـــدائي
Enseignement Primaire

الإستقصاء المدرسي الشامل
Enquête Scolaire Exhaustive

شهر اكتوبر
Mois d'octobre

مديرية التربية لولاية : المسيلة   مدرســة : ميهوبي عامر

الدفتر الإحصائي
Livret Statistique

السنة الدراسية :

2022 / 2021

تم مراجعة نسخة هذا الدفتر في 22 سبتمبر 2021   السنة الدراسية 2021 - 2022

Figure 4 represents the comprehensive school survey index specific to primary education.

The Algerian School and the Digital Environment: Implementation Mechanisms and Implementation Barriers
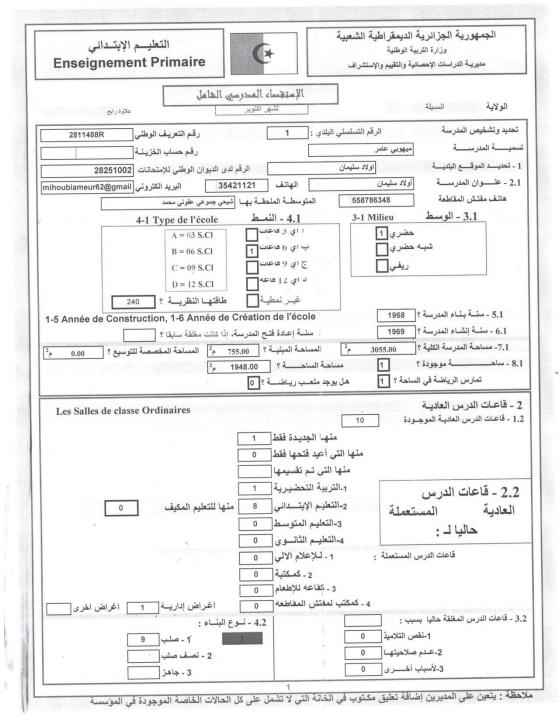

Figure 5 represents the first page of the comprehensive school survey book specific to primary education.

Digital Books for the 2022/2023 Academic Year:

With the government's announcement, the preparation of more than 1600 primary schools in various regions with digital boards began for the new academic year, which commenced on September 21st of the previous year. Algeria took its first serious steps towards the implementation of the education digitization project, aiming to reduce the burden of schoolbags. The initial phase will involve model schools as a prelude to the full digitization of education in the academic year 2023-2024. In this regard, the Algerian government selected 1629 schools and educational institutions to participate in the pilot experiments for adopting digital learning. This comes as the country has approximately 39,000 schools distributed across its regions.

To ensure the ideal security conditions for primary schools where students will use digital boards, the Algerian Ministry of Education implemented measures such as reinforcing security and installing iron bars on classroom windows. Additionally, the use of surveillance cameras will be considered to prevent theft. Educational authorities conducted regional workshops to explain the process to teachers who will be using the electronic boards in their classrooms.

SECOND REQUIREMENT: Development Strategy for the 2022/2023 Academic Year:

During the current academic year, around one million out of seven million students will benefit from digital textbooks. This is a significant step within the Algerian government's strategy to improve the education system in primary schools. The digitization of textbooks aligns with the requirements of the digital revolution. Traditional printed books are gradually being converted into electronic formats using "Word" and "PDF" systems. Readers have the flexibility to use various applications to save specific parts of the books, make notes, or modify any content. This advancement allows teachers and students to bookmark the last page they read and easily return to it.

Furthermore, digital textbooks leverage modern technological features, incorporating text, images, audio, video, and interactive graphics, which can be displayed in classrooms through digital devices. The Algerian government will cover the financial costs associated with implementing the digital textbook project in primary schools and providing digital boards free of charge. This is seen as a crucial step to address the high costs of printing traditional textbooks.[1]

Firstly:

Advantages of Digital Textbooks:

Digital textbooks play a significant role in education due to their advanced technological features that can potentially change the course of the learning

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[1] Salamat Bashari 2020: The Development of Digitization in Algeria as a Mechanism for the Post-COVID Era. Les Cahiers du Cread Journal, Volume 36, Issue 03.

process and affect its outcomes. However, they also face various challenges and require continuous development of teaching methods to keep up with modern technology. Additionally, it is essential to train educational staff to use modern learning systems and adapt to updated curricula.

Jamila Belabed, a language and communication specialist at the University of Algiers, stated, "What will be affected by digital textbooks goes beyond the technological change that affects teaching tools, to create a new culture that leads us to redefine the way schools operate and their objectives." She advocates for starting with a simple digital format of the textbook, similar to the printed version, and gradually adding links and references to other sources of information.

Secondly:

Concerns about Adopting Digital Textbooks:

Despite the justifications supporting the need to support the digitization of textbooks and the use of technological media in education, some experts and education officials in Algeria have serious concerns about the potential negative impact of this move on students' relationship with books and their enthusiasm for reading. The complete reliance on digital textbooks may gradually distance students from reading and undermine their connection to books in general. This could lead them to become overly reliant on technology. Currently, the most successful approach is believed to be reducing the curriculum. It is argued that digital textbooks are more suitable for middle and high school students, particularly since primary school students are not yet accustomed to using such technological tools for academic purposes, as they primarily associate them with play and watching cartoons.

THE SECOND TOPIC: Positives and Negatives of Digitization in the Education Sector:

FIRST REQUIREMENT: Positives:

➢ Optimal control over the employee's career path, including promotions, qualifications, employment, and professional examinations.

➢ Accurate assessment of the actual needs of the sector by identifying the number of vacant positions.

➢ Quick access to documents relevant to employees, such as employment certificates and services summaries.

➢ Improved management of promotions and reduced errors in the promotion process.

➢ Digitization allows for dealing with identification numbers instead of individuals, enhancing transparency and efficiency while eliminating the need for paper files.

SECOND REQUIREMENT: Negatives:
➢ Many educational institutions lack the necessary IT equipment for digitization.
➢ Limited internet availability in remote schools hinders the smooth implementation of digitization and its compatibility with the communication and information department at the directorate level.
➢ Insufficient experience and training for employees responsible for digitization within educational institutions.
➢ Frequent internet disruptions lead to delays and limitations in updating information on the digitization platform for many educational institutions.
➢ Lack of awareness among parents about the effectiveness of digitization and their limited familiarity with using modern technology and website icons to access their children's results and progress without physically visiting the school.

: Challenges in Implementing the Digital School Project:
➢ Insufficient internet speed and infrastructure in the country.
➢ Inadequate data management and lack of continuous updates due to a lack of training in this field.
➢ Heavy administrative burdens on school directors, affecting their performance and necessitating the appointment of dedicated personnel for digitization at the school management level.
➢ Limited engagement of parents through activating the parents' portal, which would allow them to access and monitor their children's schedules, results, and behavioral assessments without physically going to the school.
➢ Training for administrators, teachers, and students on the effective use of computers and the internet is necessary.
➢ Developing English language skills.
➢ Implementation of the internet requires political will, significant budget allocation, and effective follow-up mechanisms.
➢ Rational use of these tools, which may inadvertently introduce conflicting ideas and values that could threaten the social identity.
➢ Resistance to positive change, with some directors and teachers still adhering to traditional educational methods.
➢ Overall, these challenges need to be addressed to ensure successful digitization in the Algerian education sector. (Source: Salam Bashari, 2020)[1]
➢ Technical Obstacles: These obstacles are related to the lack of infrastructure and technological resources required for effective digitization.

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[1] Salam Bashari 2020: Digitization Development in Algeria as a Mechanism for the Post-COVID-19 Phase. Journal: Les Cahiers du Cread, Volume 36, Issue 03.

➢ Educational Obstacles: These obstacles involve resistance to positive change and a tendency to stick to traditional methods instead of embracing digital advancements.

➢ Digital Obstacles: These obstacles highlight the need for a future-oriented vision and strategy to effectively plan and implement digital initiatives in Algeria.

➢ Administrative Obstacles: These obstacles are linked to the insufficient training and development of personnel, resulting in delays in communications and reporting processes.

Recommendations and Suggestions:

➢ Establish a specialized national center for training school directors, teachers, administrators, and educational officials in handling digital technology and various programs and websites related to digitization.

➢ Conduct training courses for parents and social partners of educational institutions to transfer this technology to them and provide them with guidance on using the digital platform and interacting with its features.

➢ Introduce digitization as a vital and modern subject in the curriculum for students, as it is closely related to modern educational technologies adopted by advanced countries.

➢ Expedite the connection of educational institutions to the ALCOMSAT1 satellite dedicated to digitization, which began operating in 2018, under the supervision of education directorates across the country, and with the support of their communication and information units.

➢ Develop a continuous training plan for educators and administrators and monitor its implementation by supervisory authorities to enhance performance levels.

Conclusion:

Algeria is striving to make significant progress in the digitization of the education sector, as it is considered the leading force for any advancement and development in the country. However, the success of this endeavor relies on political will and proper execution. The potential for success lies in Algeria's human, financial, and technical resources. The project of the Algerian satellite, launched in 2018 to improve internet connectivity in educational institutions, serves as an example of challenges faced in the execution phase.

All stakeholders in the Algerian education system, including families, parents, schools, administrative staff, and students, must work together to foster a culture of digitization and overcome resistance to change. The education sector is a vital pillar for the progress of any nation, and Algeria needs to devote serious efforts to its development and advancement.

References:

1) "Valuable Aspects of the Algerian and Arab Education" (2019). An article retrieved on October 14, 2022, from the following link: https://www.nfaes.net/134.html

2) Ministry of National Education, Algeria (2018). Statistical Notebook for Middle Schools: School Investigation.

3) Ministry of National Education, Algeria (2015). Initial Guide for Using the Digital Platform of the Education Sector. Version 1, issued on December 6, 2015.

4) Salma Bashari (2020). "Digital Transformation in Algeria as a Mechanism for the Post-COVID Era," Les Cahiers du Creed, Volume 36, Issue 03.