

School Library Deficiency and Curriculum Support in Algerian Private Secondary Schools in the Age of Digital Transformation and AI: A Field Study in Blida and Tipaza Provinces

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Abstract :

In the context of digital transformation and generative artificial intelligence, school libraries remain essential to teaching and learning. This study examines the consequences of their absence in Algerian private secondary schools and its effect on curriculum support. Adopting a descriptive-analytical approach, the research combined quantitative and qualitative methods. A five-point Likert-scale questionnaire was administered to a purposive sample of sixty teachers from private secondary schools in Blida and Tipaza provinces, alongside semi-structured interviews with ten administrators and pedagogical supervisors. The findings indicate that financial constraints and inadequate infrastructure are the primary factors behind the absence of school libraries, with most participants emphasizing the lack of dedicated funding and suitable spaces. The study also highlights the legislative and conceptual marginalization of school libraries within the educational system. This absence has adversely affected pedagogical practices and weakened students' research and critical thinking skills. Although digital technologies and generative AI tools are increasingly used in education, participants agreed that they cannot fully replace the educational and cultural functions of school libraries. The study therefore calls for reforming the legislative framework of private education and promoting an Algerian-adapted smart hybrid library model.

Keywords : School Library; Curriculum; Digital Transformation; Information Literacy; Artificial Intelligence; Private Secondary Education; Algeria.

1 Introduction

For decades, the school library has been a key foundation of modern education and an essential space for learning within schools. Far more than a collection of books, it functions as the institution's living memory, linking past knowledge with present learning. It promotes independent inquiry by encouraging students to question, explore, and develop critical thinking. For teachers, the library provides a space for renewal, where new ideas, methods, and pedagogical approaches can be developed beyond the limits of the curriculum. It enriches professional practice and supports more engaging, interactive teaching. It also enables careful preparation and creative lesson design, helping educators move from simply delivering content to designing meaningful learning experiences. In this sense, the school library is not an optional element of education, but a fundamental requirement for active, reflective, and transformative learning. It has long functioned as an integrated educational environment that supports teaching and learning while strengthening the curriculum through the development of research skills, critical thinking, intellectual autonomy, and lifelong learning among students (IFLA, 2025). International guidelines issued jointly by the International Federation of

Library Associations and Institutions (IFLA) and UNESCO further emphasize that an effective school library plays a direct role in enhancing academic performance and fostering self-directed learning skills. They also stress that it is not an optional enrichment, but a core structural component necessary for achieving the goals of contemporary education (IFLA & UNESCO, 2015).

However, the situation in Algeria—especially in private secondary education—deviates significantly from this ideal model. Despite the ongoing digital transformation of the Algerian education system, which has profoundly changed how information is accessed and shared within schools (UNESCO, 2021, p.8), school libraries are largely absent in most private secondary institutions. This absence is not limited to material or infrastructural shortcomings; it rather reflects a deeper structural issue, characterized by the marginalization of the school library by school owners and administrators. Such marginalization stems either from financial and organizational constraints or from the growing assumption that the Internet, smartphones, and more recently generative artificial intelligence tools have rendered the traditional, supervised library unnecessary (IFLA, 2025). A major factor exacerbating this issue is the sharp contradiction between two parallel discourses. On the one hand, international and national frameworks emphasize the value of school libraries and call for their integration into digitally enhanced learning environments. On the other hand, field-level perceptions often justify their absence by arguing that printed materials are outdated in the digital age and that online resources alone are sufficient. This divergence creates a serious educational challenge for private secondary schools and limits their ability to develop learners' research competence and information literacy in a context marked by information overload and increasing difficulty in distinguishing credible from non-credible sources (Hossain, 2025, p.17–19).

This study is significant on three interrelated levels. First, at the scientific level, it addresses a clear gap in Algerian research on the status of school libraries in private secondary education and the implications of their absence in the context of digital transformation and the rise of artificial intelligence. Second, at the professional and educational level, it offers a critical, evidence-based analysis of the increasing marginalization of school libraries and its adverse effects on teaching practices and students' learning competencies. Third, at the societal level, it aims to raise awareness among policymakers and educational authorities about the risks of the “digital substitution” assumption regarding school libraries, while calling for a re-evaluation of the legal framework governing private education (Lance & Kachel, 2018, p.16; OECD, 2019, p.112). The study sets out four key objectives: (1) to identify the underlying causes of the absence of school libraries in private secondary schools in Blida and Tipaza, with attention to structural, financial, legislative, and conceptual factors; (2) to examine the impact of this absence on the educational process, including teachers, learners, and institutions; (3) to explore stakeholders' perceptions of digital alternatives and artificial intelligence tools, and evaluate their pedagogical relevance in comparison with a structured school library; and (4) to formulate recommendations for school owners and educational authorities, alongside a proposed framework for implementing a “smart hybrid library” model adapted to the Algerian context.

2 Conceptual-Theoretical Framework

This theoretical framework adopts an integrative perspective that conceives the school library not as a traditional information repository, but as a pedagogical component of the educational system that actively supports curriculum implementation and enhances learning outcomes. It is built on three interrelated pillars: the library as a supportive educational structure; the curriculum as a dynamic system enriched by diverse sources of knowledge; and digital transformation as a process that reconfigures the functions of the library rather than substituting it (IFLA, 2025; UNESCO, 2021). In this context, the absence of school libraries in private educational institutions goes beyond a simple

material lack; it indicates a structural deficiency within the pedagogical support system that negatively impacts the effective implementation of the curriculum (OECD, 2019).

2.1 School Library: From Information Repository to Pedagogical Function

In global academic discourse, the school library is conceived as an educational and informational space that supports teaching and learning by offering diverse knowledge resources and fostering learners' research abilities and self-directed learning skills (IFLA, 2025). This understanding moves beyond the traditional conception that restricts the library to lending services and collection management, toward a functional model that positions it as an active pedagogical agent within the school. From this standpoint, the effectiveness of a school library is not determined by the size of its collection alone, but by the degree of its integration into everyday teaching practices, its capacity to promote active learning, its provision of varied resources, and its role in developing transversal competencies (AASL, 2018, p. 45; Loertscher, 2014, p. 34).

Educational research consistently shows that an effective school library is closely linked to improved learning outcomes, especially in reading, comprehension, and critical thinking. Studies demonstrate that schools with well-equipped libraries staffed by qualified professionals generally outperform those lacking such support (Lance & Kachel, 2018, p. 16; Lance, Schwarz & Rodney, 2019, p.4). In practice, however, there remains a clear disconnect between the library's recognized pedagogical value and its actual situation, where it is often absent or reduced to a symbolic role in many private educational institutions. In the Algerian educational context, the National Education Derivative Law (Law 04-08) permits the establishment of private educational institutions but does not explicitly address the standards or requirements related to school libraries. It limits its provisions to a general obligation to provide "necessary pedagogical equipment" (JORADP, 2016). This lack of specificity creates a legislative loophole that gives private school owners considerable latitude to neglect the establishment of school libraries.

2.2 Curriculum and the Dynamics of the Learning Environment

The curriculum constitutes the organizational framework of the educational process in terms of defining targeted competencies, content, and assessment strategies. However, the effectiveness of the curriculum is not achieved solely through official texts; rather, it requires a rich and multi-source learning environment that enables learners to construct knowledge actively and interactively (OECD, 2019). Contemporary pedagogical approaches indicate that effective learning is based on the diversity of knowledge sources rather than relying exclusively on the textbook, which makes the school library an essential component in supporting curriculum implementation (Tyler, 2013, p. 32). In this context, the absence of a school library leads to a reduction in the diversity of learning resources, weakens research and exploration activities, limits self-directed learning, and reinforces rote instruction within the classroom. The Organisation for Economic Co-operation and Development (OECD) also emphasizes that learning environments enriched with informational resources contribute to improving academic performance and enhancing learners' higher-order cognitive competencies (OECD, 2019, chap. 4).

2.3 Hybrid Libraries: Challenges and Opportunities

The educational field is experiencing a rapid digital transformation that has reshaped the modes of knowledge production and circulation within educational institutions through the integration of digital platforms, smart technologies, and artificial intelligence tools (UNESCO, 2021, chap. 3). This transformation has contributed to redefining the learning environment without necessarily leading to the establishment of a fully integrated organizational alternative to the school library. International literature indicates that digitalization does not eliminate the role of the school library; rather, it redefines it within the framework of the "Hybrid Library" model, which combines print and digital

resources with guidance and support services (IFLA, 2025). The American Association of School Librarians also emphasizes that the modern school library represents an integrated physical and digital learning environment that supports research skills and critical thinking (AASL, 2018, p. 8). In the absence of such a model, digitalization remains pedagogically limited because it lacks the educational framework capable of transforming information into organized and meaningful learning.

The study by Al-Tahriwi (2025) highlighted the reality of digital transformation in Morocco's education sector, focusing on the role of digital governance in improving the performance of the educational system and developing administrative and pedagogical services. The study also addressed challenges related to infrastructure, training, and the digital divide among educational actors and institutions, while emphasizing the importance of governance in ensuring the effectiveness of digital policies and achieving educational quality. With the emergence of Generative AI tools such as ChatGPT, new challenges and opportunities have arisen for school libraries. Artificial intelligence can serve as a powerful tool for supporting learning and research; however, its use requires both "Information Literacy" and "AI Literacy" to ensure critical and ethical engagement with these technologies (Hossain, 2025, p. 19; Lo, 2024, p.4). In the absence of this structured hybrid model, artificial intelligence may aggravate the problem of superficial knowledge acquisition and dependence on ready-made solutions without deep understanding (UNESCO, 2023; Quran, 2024, p. 311).

Field experiences in secondary schools reveal that generative artificial intelligence can be employed as a dialogic mediator that enhances learners' critical thinking and creativity, rather than functioning merely as an information provider. Knowledge is thus constructed through a multi-voiced dialogue among the student, the digital tool, and the teacher, generating an active learning environment based on inquiry and exploration (Tang et al., 2024, pp. 493–503). Likewise, Oddone (2024) demonstrates that the school librarian occupies a strategic position in guiding students toward the critical and ethical use of generative AI tools. Their role extends beyond the pedagogical integration of these technologies to include developing students' competencies in evaluating AI-generated information and dealing with it consciously and responsibly (Oddone et al., 2024, pp. 3–26). Algeria's experience during the COVID-19 pandemic revealed the fragility of digital infrastructure and the inequalities in access among educational institutions themselves, making the digital alternative an emergency response rather than an established educational policy (Zayekh, 2022, pp. 10–13). Furthermore, the widespread use of generative AI tools among students has produced profound ethical issues related to academic integrity and the quality of learning, issues that require a specialized educational framework that cannot be adequately ensured in the absence of school libraries and their specialists (IFLA, 2025).

2.4 Vygotsky's Constructivist Framework

To understand the pedagogical impact of the absence of the school library, one may draw upon the theory of Constructivism developed by Lev Vygotsky (Vygotsky, 1978). This theory views learning as an active process through which learners construct their own knowledge by interacting with their social and cultural environment. In this context, the school library — through the diversity of its resources and the guidance provided by the librarian — represents an ideal "Zone of Proximal Development" (ZPD). Within this zone, learners are able, with the assistance and guidance of an expert (the librarian or teacher), to accomplish tasks that exceed their current individual capacities, thereby developing new skills and knowledge (Vygotsky, 1978). The absence of this structured space and cognitive mediator in private secondary schools leads to a form of "cognitive orphanhood" for learners, as they confront the flood of digital information (the Internet and artificial intelligence) without the critical tools necessary for selection and evaluation. This situation limits their ability to build autonomous and meaningful learning and exposes them to misleading or superficial

information, which hinders their development within the Zone of Proximal Development and reduces the effectiveness of their meaning-construction process.

2.5 Private Education's Impact on School Libraries

The previously mentioned characteristics and legislative framework governing private education in Algeria have a direct impact on the reality of school libraries within this sector through the following mechanisms:

- **Investment Logic and Financial Profitability:** Since private schools operate according to economic and investment considerations centered on profitability, any facility that does not directly contribute to attracting students or generating rapid financial returns tends to be marginalized or eliminated. Within this perspective, the school library is not regarded as a priority for investment (Johnson, 2021).
- **Legislative Gap Concerning Library Requirements:** The legislative texts regulating the establishment of private educational institutions have failed to explicitly stipulate requirements and standards for school libraries. This omission has created a significant loophole that allows institution owners to justify the absence of school libraries (JORADP, 2008; Akrou, 2016).
- **Absence of Mandatory Specialized Staff (School Librarian):** Current legislative texts do not oblige private institutions to appoint a specialized librarian, which has led to the near-total absence of this profession within the private education sector (Lance & Kachel, 2018; IFLA, 2025).
- **The Digital Fallacy:** Among some educational actors in the private sector, there prevails a mistaken belief that the Internet, smartphones, and generative artificial intelligence tools are sufficient substitutes for a real school library. However, international literature refutes this misconception (UNESCO, 2021; IFLA, 2025).

2.6 Previous Studies

2.6.1 At the International Level

International literature possesses a rich cumulative body of research concerning the impact of school libraries on academic achievement and curriculum implementation. Among the most prominent contributions is the series of "School Library Impact Studies" conducted by Keith Curry Lance and his colleagues. In this regard, the study by Lance and Hofschire (2012) confirmed the positive relationship between the availability of a well-qualified school library and higher academic achievement in standardized tests. Likewise, the study by Lance, Schwarz, and Rodney (2019) expanded these findings to include more diverse samples, emphasizing that the presence of a specialized librarian is associated with a significant increase in achievement indicators across different educational levels. At the level of international organizations, the International Federation of Library Associations and Institutions document (2025) focused on the functional transformation of the school library into a multimedia learning resource center, while the UNESCO report (2021) stressed the importance of integrating information literacy into curricula in order to ensure the quality of learning within the context of digital transformation. Studies conducted by the Organisation for Economic Co-operation and Development (2019) also demonstrated that educational environments enriched with informational resources foster critical thinking and self-directed learning more effectively than environments characterized by superficial digital consumption.

With regard to artificial intelligence, the study by Lo (2024), based on a large international survey, confirmed that information literacy has become more complex in the age of artificial intelligence, and that the absence of a specialized human mediator (the librarian) leads to a sharp decline in students' ability to evaluate the credibility of automatically generated content. Furthermore, the study by

Hossain (2025) indicated that school libraries are facing the challenge of the “qualitative digital divide”, where the problem lies not in access to technology itself, but in the absence of “smart centers” capable of transforming this technology into tools that effectively support the curriculum.

2.6.2 At the Arab and Algerian Levels

Arab and Algerian studies on school libraries are fewer in number and less diverse compared to international studies. They often focus on describing reality and diagnosing problems without deeply analyzing the pedagogical impact. Previous studies on school libraries in public governmental institutions — such as the studies of Benin (2021), Gladys (2019), Derraji (2023), Chaabane (2022), Bonif (2020), and the master’s thesis by Chenoufi Noura (Chenoufi, 2017) at University of Algiers 2 concerning school libraries and their role in serving the curriculum, in addition to the study by Ghrarmi (2023) conducted within a research team at the same university under the framework of the “National Research Projects (PNR)” — pointed to the weakness of equipment and the shortage of specialized human resources in most Algerian educational institutions.

Likewise, the study by Ben Aouda (2025) on the reality of digital transformation in the national education sector highlighted several challenges hindering digital transformation, most notably the weakness of digital infrastructure, the limited technological training of some educational actors, and the digital divide among educational institutions. However, these studies remained highly limited in addressing private education as an independent field, in analyzing the impact of the total absence of the library rather than merely its weakness, and in exploring the relationship between this absence, digital transformation, and artificial intelligence. They were largely confined to the analysis of public governmental education, with the exception of the study by Akrou (2016), which focused solely on the legal aspects regulating private educational institutions, pending the issuance of a new executive decree or specifications booklet governing accreditation for private schools (Algerian Press Service, 2025).

2.6.3 Research Gap and Previous Studies

The research is underpinned by insights derived from previous studies across various levels. Theoretically, the reports of the International Federation of Library Associations and Institutions and UNESCO contributed to framing the modern concept of the school library as a learning resource center rather than merely a lending space. At the level of problem construction, the studies conducted by Keith Curry Lance clarified the direct relationship between the presence of a library and academic achievement. Methodologically, the integration of quantitative and qualitative approaches was inspired by prevailing practices in contemporary educational studies. Nevertheless, the current study distinguishes itself from previous research in three dimensions: (1) its exclusive focus on the Algerian private secondary education sector, which has remained largely neglected by researchers; (2) its analysis of the impact of the total absence of the library rather than its relative weakness; and (3) its exploration of the interaction among three intertwined variables: the absence of the library, digital transformation, and the nature of the private sector within the Algerian context. In this way, the study constitutes a critical extension of international literature while incorporating the specificity of the local context.

3 Methodological Framework of the Study

3.1 Defining the Research Problem

School libraries across international educational contexts have undergone profound structural transformations that have redefined their functions within the educational system. They have gradually evolved from their traditional model, centered on preserving documentary collections and managing lending services, toward a more dynamic model represented by the “Learning Resource

Center”, which integrates print and digital resources while simultaneously fulfilling pedagogical, informational, and technological functions (IFLA, 2025). However, this conceptual transformation has not found equivalent implementation within the Algerian context, particularly in private secondary educational institutions, where a clear gap is observed between the modern educational discourse advocating digitalization and the field reality, which in many cases reveals the total or near-total absence of the school library as an organized pedagogical facility. Accordingly, the main research problem of the study may be formulated through the following question:

- **Main Research Question:** To what extent does the absence of school libraries in private secondary education institutions in Algeria affect the support of the curriculum in the context of digital transformation and artificial intelligence?

- **Sub-Questions:**

1. What are the real causes (structural, financial, legislative, and conceptual) behind the absence and lack of activation of school libraries within private secondary education institutions in the provinces of Blida and Tipaza?
2. What are the implications of the absence of the school library on the educational process and its different actors (teacher, learner, and institution) in private secondary schools?
3. What digital alternatives and artificial intelligence tools are actually being adopted within these institutions to compensate for the absence of the school library, and what are the perceptions of educational actors regarding their effectiveness?
4. To what extent do these digital alternatives contribute to supporting the curriculum and developing critical research skills in comparison with the expected role of a structured school library?

3.2 Research Hypotheses

- **General Hypothesis:** The absence of school libraries in private secondary education institutions in Algeria leads to a decline in the effectiveness of curriculum support, as well as a deterioration in learners’ critical research skills and information literacy, despite the expansion in the use of digital media and artificial intelligence.

- **Sub-Hypotheses:**

1. The absence of the school library contributes to the decline of scientific research and inquiry skills, as well as weakening learners’ ability to distinguish between reliable and unreliable sources in private secondary schools.
2. The absence of the school library negatively affects the diversification of pedagogical practices and teaching innovation among teachers, limiting their ability to implement active learning strategies.
3. The digital alternatives currently adopted in private institutions (such as search engines and artificial intelligence tools) do not constitute a complete pedagogical substitute for the school library; rather, they may lead to “cognitive superficiality” and a decline in the quality of educational outcomes.
4. The absence of specialized informational supervision (provided by a qualified librarian) within institutions leads to unregulated and unsafe use of digital media and artificial intelligence in learning, thereby exacerbating challenges related to academic integrity.

3.3 Research Methodology and Field Procedures

The study adopted the Descriptive Method, as it is considered the most appropriate for the nature of the research problem. This method makes it possible to describe the phenomenon as it exists in the field, analyze the relationships among its variables, and interpret them in light of the theoretical framework and scientific literature (Whitney, 1950). The study also adopted a strategy of Methodological Triangulation between quantitative and qualitative approaches. The questionnaire was employed as the principal tool for measuring the attitudes and perceptions of a group of teachers working in private secondary schools in the two provinces, while the semi-structured interview served as a complementary qualitative interpretive tool. This integration enhances the credibility of the findings and enriches their explanatory value (Creswell & Creswell, 2018; Patton, 2015).

3.4 Data Collection Tools

A) Structured Questionnaire

The questionnaire was designed on the basis of theoretical literature and exploratory field data, and was distributed to sixty (60) teachers from various private secondary schools across the provinces of Blida and Tipaza. The questionnaire included four main sections: (1) the personal and professional data of the respondents (teachers), (2) the reasons behind the absence of the school library within the institution, (3) the impact of its absence on curriculum support, and (4) digital alternatives, digital transformation, and teachers' perceptions regarding artificial intelligence. Responses were measured using the Five-point Likert Scale, ranging from "Strongly Agree" (5) to "Strongly Disagree" (1) (Cohen, Manion & Morrison, 2018).

B) Semi-Structured Interview

Semi-structured interviews were conducted with ten (10) participants, including directors of private institutions and pedagogical supervisors (8 from Blida and 2 from Tipaza). This qualitative tool was selected because of its suitability for the in-depth exploration of professional representations and organizational contexts related to the absence of the school library. It allows respondents the freedom to express themselves within predetermined guiding themes (Patton, 2015). The interview was thus employed as a complementary Qualitative Explanatory Tool for interpreting the results of the quantitative questionnaire.

3.5 Population and Sample

The study population consists of all educational stakeholders (principals and teachers) in private secondary education institutions in the provinces of Blida Province and Tipaza Province, totaling ten (10) institutions. A purposive sample was adopted for the population of principals, as it is considered the most appropriate for descriptive-analytical studies aiming to understand phenomena within their natural context without strict statistical generalization (Patton, 2015). As for the teacher population, a non-probability quota sample was used, whereby the questionnaire was distributed to 60 teacher respondents (10 teachers from each school or secondary institution).

Table (1): Characteristics of the Sample of Principals and Pedagogical Administrators (N = 10)

Professional Category	Province	Number	Percentage
Principals and administrators of private educational institutions	Blida Province	8	80%
	Tipaza Province	2	20%

Professional Category	Province	Number	Percentage
Professional experience	Less than 5 years	6	60%
	More than 5 years	4	40%
Total	/	10	100%

Table (2): Characteristics of the Teacher Sample (N = 60)

Professional Category	Province	Number	Percentage
Teachers from various specializations	Blida Province	50	83%
	Tipaza Province	10	17%
Professional experience	Less than 5 years	38	63%
	More than 5 years	22	37%
Total	/	60	100%

It should be noted that there is an imbalance in the distribution of the sample between the two provinces (83% of the questionnaires were collected from Blida Province compared to 17% from Tipaza Province in the teacher sample, and 80% versus 20% in the principals' sample). This imbalance is attributed to the higher concentration of private secondary education institutions in Blida Province compared to Tipaza Province. Moreover, this study did not include a direct survey of students' opinions due to the absence of school libraries in these institutions, in addition to administrative and educational constraints, including the need to obtain parental consent and the sensitivity of the subject for those responsible for private schools.

3.6 Validity and Reliability of the Instrument

Face validity was verified by submitting the questionnaire to a panel of five (5) expert reviewers specialized in library science, educational sciences, and research methodology. Their observations contributed to the reformulation of certain items, the removal of repetitive statements, and the enhancement of the clarity of concepts related to digital transformation and artificial intelligence. As for reliability, it was measured using Cronbach's Alpha coefficient, which reached:

Table (3): Cronbach's Alpha Reliability Coefficient for the Questionnaire Dimensions

Dimension	Number of Items	Cronbach's Alpha Coefficient	Reliability Level
Reality of the School Library	8	0.84	High
Impact of the Absence on the Curriculum	12	0.87	Very High
Digital Alternatives and Artificial Intelligence	9	0.80	High
Overall Questionnaire	29	0.82	High

These values are statistically high and indicate good internal consistency among the instrument items and its suitability for statistical analysis, as they exceed the acceptable threshold set by Nunnally (1978) at 0.70.

3.7 Statistical Analysis Methods

The data were analyzed using SPSS software (version 26), relying on the following statistical methods: frequencies and percentages to describe the sample characteristics and the distribution of responses; the arithmetic mean to determine the level of agreement for each dimension and to rank the items according to their relative importance; and the standard deviation to measure the degree of dispersion in respondents' opinions. The interpretation scale of the means was adopted according to a modified three-level distribution: [1.00–2.33] low agreement; [2.34–3.67] moderate agreement; [3.68–5.00] high agreement. It is worth noting that hypothesis testing in this study is descriptive-interpretive in nature, based on Likert scale agreement levels rather than inferential statistical tests.

4 Presentation and Analysis of Results

4.1 The Reality of the School Library and the Reasons for Its Absence

4.1.1 Quantitative Results of the School Library Reality Axis

Table (4): Teachers' Perceptions of the Reality of the School Library (N = 60)

Item	Mean (M)	Std. Dev. (SD)	Level of Agreement
Our institution has a school library in its true sense	1.43	0.61	Very low
The library is equipped with up-to-date documentary resources	1.38	0.57	Very low
A formally appointed specialized librarian is available	1.25	0.49	Very low
The library is effectively integrated into the educational process	1.33	0.53	Very low
The administration allocates attention to the library in its annual budget	1.52	0.68	Very low
Overall mean of the axis	1.38	0.58	Very low

The responses of the surveyed teachers reveal a clear consensus on the absence of an effective school library in their institutions, as the overall mean of the axis reached (1.38) with a standard deviation of (0.58), which falls within the lowest category of the adopted interpretation scale. The item “a formally appointed specialized librarian is available” recorded the lowest score with a mean of (1.25), highlighting a severe professional gap in this facility. This reality intersects with the legislative vacuum previously mentioned in the theoretical framework, as the absence of an explicit legal requirement for the existence of a library and a librarian responsible for its management appears to reinforce a systematic marginalization of the school library as an institution.

4.1.2 Causes of Absence: Qualitative Interpretation

The respondents in the semi-structured interviews categorized the reasons for the absence of the library into three overlapping groups:

Table (5): Classification of the Reasons for the Absence of the School Library According to Interviews (N = 10)

Category of reasons	Frequency	Percentage
Financial and structural reasons (lack of budget, limited space)	8	80%
Conceptual reasons (belief that it is not necessary)	6	60%

Category of reasons	Frequency	Percentage
Legislative reasons (absence of legal obligation)	5	50%

One secondary school principal expressed this reality by saying : « The owner calculates profits and losses... the library does not bring additional students in advertisements, and the law does not explicitly require it, so why spend money on it ? » (P.D.1, private secondary school principal, Blida Province, 2024). In contrast, a pedagogical director expressed a different viewpoint : « An institution without a library implicitly announces that its education is merely a mechanism for passing exams, not a real educational project » (P.D.2, pedagogical director, Tipaza Province, 2024).

4.2 Implications of the Absence on Curriculum Support

4.2.1 Quantitative Results of the Impact of Absence Axis

Table (6): Teachers' Perceptions of the Implications of the Absence of the School Library (N = 60)

Item	Mean (M)	Std. Dev. (SD)	Level of Agreement
The absence of a school library weakens the diversification of pedagogical practices	4.08	0.76	High
Students lack systematic research skills	4.32	0.69	Very high
Classroom instruction alone is insufficient to support the curriculum	4.21	0.73	High
The absence of a library reduces extended research activities	4.15	0.74	High
Students rely on the internet without critical guidance	4.48	0.63	Very high
The absence of a library weakens the habit of independent reading	4.27	0.71	High
Overall mean of the axis	4.25	0.71	High

These results reveal a high level of agreement among the surveyed teachers regarding the consequences of the absence of the school library (M = 4.25). The statement “students rely on the internet without critical guidance” ranks first with a mean of (4.48), highlighting the seriousness of the information gap in the context of digital transformation. This reality is supported by the findings of Lance & Kachel (2018), who argue that the absence of specialized library mediation leads to a decline in learners' critical literacy skills when dealing with digital sources.

4.2.2 The Teaching Dimension

Table (7): The Impact of the Absence of the Library on Teachers and Teaching

Item	Mean (M)	Std. Dev. (SD)	Level of Agreement
The absence of a school library weakens the diversification of pedagogical practices	4.08	0.76	High
Classroom instruction alone is insufficient to support the curriculum	4.21	0.73	High

Item	Mean (M)	Std. Dev. (SD)	Level of Agreement
The absence of a library has reduced enrichment activities	4.15	0.74	High
The absence of a library confines learning to rote instruction	4.02	0.78	High
Teachers suffer from limited access to reference support materials	3.95	0.81	High
Overall mean of the sub-axis	4.08	0.76	High

The questionnaire results revealed that the absence of the school library casts a significant shadow over teaching practices. More than four-fifths of the surveyed teachers ($M = 4.08$, $SD = 0.76$) acknowledged that this absence weakens their ability to diversify pedagogical practices beyond the textbook. They also confirmed ($M = 4.21$, $SD = 0.73$) that classroom instruction alone is insufficient to adequately support the curriculum in the absence of additional learning resources. The practical impact of this situation is evident in the reduction of enrichment activities that require multiple references ($M = 4.15$), which confines learning to classroom rote instruction and moves it away from the active learning model advocated by the renewed Algerian curricula. This reality aligns with the findings of Lance & Kachel (2018), who argue that the absence of a library transforms the teacher from a “learning facilitator” into a mere “information transmitter,” contradicting the spirit of the competency-based approach adopted in the Algerian educational system.

4.2.3 Students and Academic Performance

Table (8): The Impact of the Absence of the Library on Students and Academic Achievement

Item	Mean (M)	Std. Dev. (SD)	Level of Agreement
Students lack systematic research skills and source evaluation abilities	4.32	0.69	Very high
Students rely on the internet without critical guidance	4.48	0.63	Very high
Clear decline in students' habit of independent reading	4.27	0.71	High
Narrowing of intellectual horizons in humanities subjects	4.18	0.75	High
Weak ability in documentation and referencing	4.10	0.77	High
Overall mean of the sub-axis	4.27	0.71	High

The questionnaire results revealed direct consequences of the absence of the school library on learners, as high levels of agreement were recorded across all indicators of negative impact. The respondents strongly confirmed the weakness of students' systematic research skills and source evaluation abilities ($M = 4.32$, $SD = 0.69$). In addition, 83.3% of them pointed to a clear decline in the habit of independent reading, while 78.3% reported a narrowing of intellectual horizons in humanities subjects such as philosophy, Arabic language, and history. The most prominent phenomenon in the respondents' answers was students' reliance on the internet without critical guidance ($M = 4.48$, $SD = 0.63$), which results in superficial research lacking documentation and analytical depth. These findings are consistent with those of Lance & Kachel (2018), who

demonstrated that the absence of specialized library mediation directly leads to a weakening of learners' critical literacy skills in dealing with information sources. One pedagogical director expressed deep concern about the educational implications of this absence on students' research behavior: « Today's student searches on Google, takes the first result that appears, and submits it as a research paper [...] because they were never taught how to distinguish between a reliable source and a questionable one » (P.D.3, pedagogical director, Tipaza Province). Another director added in the same context that this reality is directly reflected in the quality of students' submitted work: « When they are assigned an extended research task, the results come as copies from websites without analysis or referencing [...] because the institution has never provided them with an environment that teaches them how to consult real references » (P.D.4, private secondary school principal, Blida Province).

4.3 Digital Alternatives and AI: Reality and Assessment

4.3.1 Quantitative Findings of Digital Alternatives

Table (9): Teachers' Perceptions of Digital Alternatives and Artificial Intelligence (N = 60)

Item	Mean (M)	Std. Dev. (SD)	Level of Agreement
We rely on search engines instead of the library	4.40	0.64	Very high
Some students use artificial intelligence to complete their assignments	4.53	0.59	Very high
Digital alternatives do not pedagogically replace the library	4.08	0.81	High
Lack of guidance leads to unregulated use of digital resources	4.30	0.67	Very high
E-learning platforms sufficiently cover curriculum needs	2.31	0.88	Low
Overall mean of the axis	3.92	0.72	High

It is noteworthy that the highest mean in this axis was recorded for the statement "some students use artificial intelligence to complete their assignments" (M = 4.53), while the statement "e-learning platforms sufficiently cover curriculum needs" recorded the lowest mean in the axis (2.31), falling within the low category, which refutes the claim of digital alternatives being an adequate substitute.

4.3.2 Stances on Artificial Intelligence

More than eight out of ten principals (80%) expressed growing concern about the unregulated use of artificial intelligence tools. One of them stated explicitly: « Artificial intelligence gives you a ready-made text, but it does not teach you how to think or how to question information [...] the library used to teach us to be researchers, whereas these tools turn us into consumers » (P.D.5, secondary school principal, Blida Province). These perceptions are consistent with UNESCO (2021), which emphasizes that the effective educational use of artificial intelligence requires a specialized regulatory framework that cannot be ensured in the absence of school libraries and their professional specialists.

5 Interpreting Results Theoretically

5.1 Hypothesis Testing Results

Table (10): Evaluation of Hypotheses in Light of Field Results

Hypothesis	Result	Decision
General hypothesis: the absence weakens curriculum support	M = 4.25 (High)	Confirmed
Hypothesis 1: decline in research and inquiry skills	88.3% confirmed it	Confirmed
Hypothesis 2: negative impact on pedagogical practices	M = 4.08	Confirmed
Hypothesis 3: digital alternatives are not pedagogically sufficient	E-learning platforms M = 2.31 (Low)	Confirmed
Hypothesis 4: unregulated use of digital tools and AI	M = 4.30	Confirmed

It is noteworthy that all four hypotheses were confirmed at high levels of significance, which supports the study's main hypothesis and confirms that the absence of school libraries in private secondary schools is not a marginal phenomenon, but rather a structural dysfunction that affects the very core of the educational process.

5.2 Comparative Analysis within the International Context

The findings of this study intersect with recent global trends that warn against the “digital substitution fallacy” regarding school libraries. While our study revealed students’ reliance on the internet and artificial intelligence without critical guidance (M = 4.48), a large-scale international survey conducted by Lo (2024) confirmed that information literacy has become increasingly complex in the age of artificial intelligence, and that the absence of a specialized human intermediary (school librarian) leads to a significant decline in students’ ability to evaluate the credibility of AI-generated content (Lo, 2024). While our results showed that digital alternatives do not pedagogically replace the library (M = 4.08), this finding aligns with Ayinde (2024), who argues that academic and school libraries in developing countries face the challenge of a “qualitative digital divide”, where the problem is not access to technology but rather the absence of “smart hubs” that transform such technologies into curriculum-supporting tools (Ayinde, 2024). Likewise, Merga (2025) reinforces our findings regarding the decline in reading and research skills, noting that the absence of structured school libraries has led to a noticeable decrease in students’ performance in reading comprehension and inquiry-based assessments (Merga, 2025).

Regarding generative artificial intelligence, our study revealed its widespread use by students to complete assignments (M = 4.53), which is consistent with the warnings of Porembe (2024), who argues that integrating AI into student research projects without library supervision leads to the “erosion of the research process”, transforming it from genuine inquiry into mere text generation (Porembe, 2024). This international convergence demonstrates that the issue in Algerian private secondary schools is not isolated, but part of a global crisis that requires redefining the role of the library as an “AI Literacy Ally”, as proposed by Del Castillo (2025). These findings are consistent with the theoretical framework of the study, particularly Vygotsky’s (1978) concept of the Zone of Proximal Development, where the school library serves as an optimal environment for meaning construction and the development of higher cognitive skills. The results also strengthen the call for adopting a “smart hybrid library” model that integrates physical and digital resources while regulating the use of artificial intelligence in the educational process.

6. Conclusion and Recommendations

6.1 Study Summary

This study aimed to investigate the implications of the absence of school libraries on curriculum support in private secondary education institutions in the provinces of Blida Province and Tipaza Province, Algeria, in the context of digital transformation and artificial intelligence. The field results revealed an almost complete absence of effective school libraries in these institutions, due to a combination of structural, financial, legislative, and conceptual factors. The study demonstrated that this absence has profound negative consequences on the educational process, including weak critical research skills among learners, reduced diversity of teachers' pedagogical practices, and declining quality of educational outcomes. It also confirmed that digital alternatives, including generative AI tools, do not provide an adequate substitute for the vital role of the school library, and may in fact exacerbate superficial knowledge acquisition in the absence of specialized guidance.

6.2 Main Findings

- An effective school library facility is almost entirely absent from all ten institutions in the study sample, as reflected in teachers' responses ($M = 1.38$), due to a combination of financial constraints, legislative gaps, and conceptual marginalization.
- The misconception that "the internet replaces the library" is prevalent among a considerable proportion of educational stakeholders, while international literature and the testimonies of most respondents themselves demonstrate the limitations of this assumption.
- The absence of a school library produces students characterized by superficial research practices and weak informational competence, lacking critical evaluation and systematic documentation skills.
- Generative artificial intelligence represents a growing concern among teachers and educational supervisors, who observe its use for completing assignments without genuine learning.
- All four hypotheses of the study were confirmed with high mean scores, supporting the general hypothesis and confirming a significant relationship between the absence of the library and weak curriculum support.
- Qualitative analysis reveals that educational counselors are the group most sensitive to the necessity of the school library, while some principals and institution owners tend to evaluate it through a short-term financial cost-benefit logic.

6.3 Recommendations

a) For Private Secondary School Owners:

- Allocate an annual budget for the school library within the operational plan (at least 5% of the institution's annual educational budget), with a portion dedicated to licensed digital resources.
- Provide an appropriate physical space for the school library, even if limited in the initial stage, with a plan to gradually integrate it into the institution's digital infrastructure.
- Appoint a qualified librarian or assign a teacher to receive professional training in library science to ensure proper informational and pedagogical guidance for students.
- Rethink short-term financial profitability logic and consider the library as an educational marketing tool that differentiates the institution and enhances its academic attractiveness.

b) For Supervisory and Legislative Authorities:

- Amend legal texts governing public and private educational institutions to explicitly require the presence of a school library in every private school, with defined minimum standards for space, collections, and human resources.
- Require private institutions to appoint a qualified librarian or contract an external learning resource center as a condition for licensing or license renewal.
- Integrate “information literacy” and “artificial intelligence literacy” into the national curriculum to ensure the teaching of critical research skills, documentation, and academic integrity.
- Establish a support fund for school libraries in the private sector, partially financed through school fees, to ensure equal opportunities among institutions.

c) For Teacher Training Institutions and Research Centers:

- Develop specialized training programs on the “hybrid school library” within library and information science institutes, focusing on integrating print resources, digital resources, and artificial intelligence tools.
- Encourage scientific research on the impact of school libraries on academic achievement in Algerian and Arab contexts, in order to address the existing research gap in this field.

d) Proposed Model: The “Hybrid Smart School Library”

The study proposes a preliminary model of a hybrid smart library adapted to the Algerian context, combining:

1. **Pedagogical function:** integrating the library into the curriculum through guided research activities and projects.
2. **Digital function:** providing a local digital platform (Local Digital Repository) containing reliable sources and licensed electronic references linked to curriculum content.
3. **Guidance function:** employing a specialized librarian who trains students in the critical and ethical use of artificial intelligence tools and teaches “prompt literacy.”
4. **Community function:** opening the library to parents and the local community at scheduled times to strengthen the school–family–community partnership.

6.4 Limitations and Future Directions

This study has certain limitations that should be acknowledged. First, the uneven geographical distribution of the sample between the two provinces (a clear predominance of Blida Province) limits the generalizability of the findings to Tipaza Province. Second, the study did not directly include students’ perspectives due to administrative constraints, although teachers’ and principals’ perceptions provided a clear picture of learners’ reality. Third, the descriptive-analytical nature of the study did not involve strict inferential statistical tests, relying instead on interpretive levels of agreement. For future research, the study suggests: (1) expanding the sample to include other provinces and direct student participation; (2) conducting quasi-experimental studies to measure the impact of introducing hybrid libraries on academic achievement; (3) exploring successful international experiences in hybrid school libraries (such as Finland and Singapore) and assessing their adaptability to the Algerian context; (4) examining the relationship between “AI literacy” and “information literacy” in the absence of school libraries.

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