Research Article

Beyond Access: Empowering Algerian Students in Online Learning Through Digital Literacy and a Pedagogy of Abundance

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ABSTRACT

This research investigated how the rapid shift to online learning platforms in Algerian universities has exposed a critical gap in students' digital dexterity skills. It aimed at exploring students' weaknesses in navigating limitless online resources. Data from a survey administered to 150 students and interviews with 12 university teachers disclosed key areas where students struggle. The findings revealed that despite the recent blossoming of online education in Algeria, our students still experience major weaknesses regarding digital dexterity. Also, the findings highlight the need to move towards a pedagogy of abundance to equip students with the skills to access information and to critically evaluate online content. Empowering teachers to integrate digital literacy development within their teaching practices is another crucial action to take to bridge the digital dexterity gap and ensure students can thrive in this information-rich online learning environment.

Keywords: *Algerian Students; Algerian Higher Education; Digital Dexterit; Digital Literacy; Pedagogy of Abundance*

1. Introduction

During the last ten years, the educational realm in most countries of the world has witnessed a unique diversification of learning tools and an extraordinary abundance of content thanks to various emerging educational technologies and miscellaneous online learning platforms. The latter are now offering limitless opportunities for learners, from all over the world, to get access to an ever-ending amount of information. In this regard, the last decades -and the post-pandemic years specifically -have been marked by the continuous digitalization of learning and teaching; all of which aim to make education relevant to our modern society. Nonetheless, this rapid shift into a more digitalized and unlimited knowledge content has led many education experts and professionals, mainly in the developed countries, to bring into question the consequences of such a profusion of digital online resources, mainly with the extraordinary rise of Artificial Intelligence (AI) tools.

In his article "A Pedagogy of Abundance", Martin Weller (2011) stresses that "we are witnessing a fundamental change in the production of knowledge and our relationship to content. This is producing an abundance of content which is unprecedented." (p. 232) Weller explains that this change in the production of knowledge represents a transition from what he refers to as "knowledge scarcity" to "knowledge abundance". (Weller, 2011). In other words, before the digital era, scholarly knowledge was traditionally organized around the premise that knowledge is scarce. Manuscripts and books as knowledge artifacts were exhaustible, and costly to produce and distribute. Digital content, however, is persistent, replicable, scalable, and searchable (Boyd, 2011, p. 46). In this sense, digital knowledge artifacts can be distributed with negligible cost to the

originator or user, and without being consumed or diminished in the process. As a result, widespread and increasingly mobile access to digital knowledge artifacts in "an abundant and continually changing world of information marks a shift from an era of knowledge scarcity to an era of knowledge abundance, even though access remains inequitably distributed" (Stewart, 2015).

This transition from a scarcity of knowledge to an abundance of content and resources evoked a decisive question that Weller asked a decade ago. In the words of Weller, "this scale and range of learning related content at least raises the question of whether we have developed the appropriate teaching and learning approaches to make best use of it. In short, what would a pedagogy of abundance look like? (Weller 2011, 227), By questioning the nature of the pedagogy that might be suitable to this abundance of content, Weller points to that we may need new pedagogies to meet the deeply rooted changes that the ubiquitous learning technologies and accessible limitless content have brought to the world of education.

It is Weller's question that has fuelled my intellectual curiosity to embark upon the present research project but in a context that is different in various ways. Indeed, the Algerian tertiary education has witnessed remarkable changes since a couple of years, and mainly since the outbreak of the Covid19 pandemic. Because Algeria, like most countries of the world, had to confront the first stage of the global pandemic with a total lockdown, the only solution for higher education authorities was to impose MOODLE as the only distance learning platform on university teachers and students. Consequently, to this transition to online education, Algerian policymakers realized then that traditional education had no place in this technology-driven world.

So, as a university teacher who already uses online platforms and various e-learning tools since 2014, this sudden shift to online education and abrupt digitalization of teaching and learning in the Algerian tertiary education have raised my concern regarding the possible unfavourable implications for higher education in this country where the digital divide is said to cause a wide technological gap between various regions in Algeria. Also, by evoking Weller's calling into question the relevance of existing pedagogies regarding the rapid changes that have occurred and will continue to happen in our classroom due the infiltration of new technologies both in the way we teach and learn, the issue that I highlight in this research concerns chiefly the impact of abundant online content on our students' knowledge construction, on their learning process and on their digital skills.

2. Literature review

In a KPMG international report entitled "The Future of Higher Education in a Disruptive World", Stephen Parker AO reveals that the Golden Age of universities in the developed world is passing, and life is becoming tougher. Rising costs are no longer matched by a willingness of governments and students to pay for them. And yet the traditional operating model of a university cannot produce sufficient productivity gains to cover the gap (p. 03, 2020). Indeed, the current technology-driven digital age has brought several major transformations to the landscape of higher education in most countries of the world. One of the most significant changes in the tertiary sector worldwide is the increased access to diverse online content and the flexibility of the learning process. The unprecedented rising of Online learning platforms, Massive Open Online Courses (MOOCs), and digital resources have noticeably increased access to higher education, breaking down geographical and financial barriers. As for the ever-growing flexibility of the learning and teaching processes, students can now pursue degrees part-time, remotely, or at their own pace, catering to diverse needs and circumstances. Also, there are now more possibilities to combine traditional classroom experiences with online

technologies, and this often offers students more flexibility and personalized learning opportunities.

As a result of the rapid growth of these promising educational technologies and platforms, new learning paradigms have also emerged. This includes particularly collaborative learning, self-directed learning, lifelong learning, and more focus on employability. And even though blended learning and online learning are not without their challenges -such as ensuring that all students have access to the technology and resources, they need to succeed in these learning environments, designing online and blended learning experiences that are engaging and effective - the rise of blended learning and online learning has convincingly the potential to transform education for the better. By embracing these new learning paradigms, educators can create more personalized, engaging, and effective learning experiences for all students.

2.1 Online learning in Algeria: progress or mirage?

Over the last ten years, the rise of online learning methodologies has revolutionized the education landscape, offering exciting new avenues for knowledge acquisition and skills development. This revolution has reached its utmost during and after the outbreak of the Covid19 pandemic. The latter has acted as a catalyst for the already growing trend of online learning, pushing it into the mainstream spotlight. In the tertiary sector, this global event has presented higher education institutions with the impediment of transforming to a new curriculum, pedagogy, and educational management. Inevitable transformation in higher education triggered by COVID-19 is still ongoing, albeit most countries are now at the endemic stage (Rasli et al., 2022). In developed countries that are technologically advanced, online learning predates the COVID-19 pandemic by quite a bit. In fact, its roots can be traced back to the early days of the internet, with universities offering pilot programs and distance learning opportunities even in the 1990s (Amrane-Cooper et al., 2023). However, in recent years, developed countries have witnessed a significant increase in the popularity of online learning and other technology-assisted learning methods and approaches. This surge is driven by several factors, including the development of user-friendly platforms, enhanced internet connectivity, and the relentless rise in university and college tuition fees, which has made online learning a more cost-effective alternative for many students and families. In the words of Stephen Parker AO, universities are being buffeted by other forces. Technological change and a new world of work are generating calls for new types of post-secondary education (p01, 2020).

As for Algeria, which is classified as a developing country with a challenging higher education system, its landscape of online learning has undergone a significant transformation in the wake of the COVID-19 pandemic. Nonetheless, despite this sudden turning point in Algerian higher education, Algeria's journey with online education began with radio and TV-based distance learning in the 90s, its early years were hampered by limited internet access and a focus on vocational training. The 2000s saw pilot projects in universities like USTHB, gradually shifting perceptions towards recognizing online learning's potential. However, it was the COVID-19 pandemic that truly propelled Algeria into a rapid expansion of online learning platforms, encompassing diverse disciplines and catering to a wider audience. While hybrid models are gaining traction, challenges like the digital divide and faculty training remain. Despite these hurdles, the future of online learning in Algeria appears bright, holding the potential to democratize access to education and enhance skill development in exciting ways.

According to Boutkhil and Benchaiba (2012), the first comment about the E-learning strategy, launched by Djaweb, is that there are no specific programs devoted for teachers to benefit from ICTs and E-learning for better professional development.

Teacher professional development is essential if technology provided to schools is to be used effectively. Simply put, spending scarce resources on informational technology hardware and software without financing teacher professional development as well is wasteful. That is, designing and implementing successful teacher professional development programs in the application of technology is neither easy nor inexpensive (p 41).

Therefore, the history of online education in Algeria is relatively young and is still at its embryonic stage, and there are many challenges that prevent universities to implement effectively and efficiently online learning and blended learning. In fact, many hindering factors do still exist and the most impactful of these are:

1) The digital divide: This refers to the unequal access to technology and internet connectivity. Access to the internet is not always possible in many areas, particularly rural and Saharan areas.
2) Relatively inadequate technological infrastructure: Universities and schools might lack the necessary hardware, software, and technical support to manage online platforms effectively (Bin Herzallah 2021).
3) Teacher training and preparedness: Many educators lack the skills and knowledge to effectively design and deliver online courses, leading to less engaging and interactive learning experiences (Mehdaoui and Benabed 2022).
4) Traditional teaching methods: Because the culturally ingrained pedagogical approaches always focused on teacher-centered, it might be difficult for many teachers to shift to an online environment as the latter requires adaptation and innovation.
5) Student learning styles and motivation: Not all students thrive in self-directed online learning environments as they are familiar with this mode of learning. Thus, the lack of face-to-face interaction can affect motivation and engagement for some students.
6) Language barriers: Limited access to online content and resources in Arabic can also pose challenges for some students, mainly those of rural areas.

The abovementioned factors may differ from one region to another and from one institution to another. One can contend that the socioeconomic diversity of Algeria as a young independent nation is a major issue that may hinder or slow down the success of the digitalization and *technologization* of higher education in this country. Indeed, the heart of the matter regarding the digital transformation of higher education is the students' capacity to cope with this transformation. It might be evident that Algerian young students, as Ganz's, are familiar with the world of technology and internet and that they are competent netizens mainly on social media. Nonetheless, and as a university lecturer and expert in the field of educational technology for over ten years, I have noticed that many students have social media skills, but they do not have digital literacy skills, or digital critical literacy skills; and thus, they lack digital dexterities. In the next section, I will embark on a deeper exploration of digital literacy, digital critical literacy, and digital dexterity, unveiling their key elements and emphasizing their significance for Algerian university students' navigation of the ever-evolving digital landscape.

2.2 Algerian Students and the Pedagogy of Abundance: Bridging the Gap

The rapid emergence of online content has created a situation of information abundance for students worldwide, and Algerian students are no exception. However, this abundance presents both opportunities and challenges for the Algerian education system. While students struggle with navigating and utilizing this vast amount of information for academic purposes, some university teachers may not have yet fully recognized the need to transition towards a "pedagogy of abundance." As Weller

explains, this educational approach challenges traditional, scarcity-based models by embracing readily available online resources and equipping learners with the skills to effectively utilize them. Thus, this shift necessitates a move away from solely teacher-centered knowledge transmission towards fostering student autonomy and critical thinking in information navigation, evaluation, and application.

However, research suggests that Algerian university teachers may not be fully prepared to adapt to this evolving landscape. For instance, in two previous research papers, I highlighted a gap between the reality of student experiences with online content and the teaching methods employed in some Algerian universities (Sarnou, 2020; Sarnou, 2022). This gap could potentially hinder students' ability to develop the necessary skills to navigate and utilize the abundance of information effectively for learning purposes.

In consequence, this research aims to draw attention to the teachers' and students' concerns about the shift to online education that is still at its embryonic stage. This research also emphasizes that raising awareness among educators about the pedagogy of abundance and its potential benefits has now become crucial. Thus, embracing the new pedagogies of abundance would allow Algerian educators to empower their students to become self-directed learners equipped to thrive in a world overflowing with information, ensuring their success in both academic and professional pursuits, and these are currently the most essential objectives of policy makers in Algeria. In this regard, the pedagogy of abundance offers exciting possibilities for enriching our students' learning experiences. On another hand, Algerian university teachers also need to be aware of its potential pitfalls and actively guide students to become discerning and critical consumers of information in the digital age.

2.3 From Social Media Savvy to Digital Dexterity: Algerian Students' Next Step

It might have become evident that social media skills are now considered as essential not only in daily life interactions but also in academic contexts. Nonetheless, although digital technologies, and social media in particular, have become essentially ubiquitous today, it is problematic to conflate this prevalence with effective use of these technologies (Smith and Storrs, 2023). In fact, navigating the vast digital realm requires more than just social media skills, and Algerian students today are facing the crucial task of equipping themselves with digital literacy and digital dexterities to thrive in the information age despite of the many challenges and obstacles that the previous section has mentioned.

Indeed, while confidently navigating social media platforms may be familiar to many Algerian students, they may ignore other digital skills that would help them manage the abundance of content they face whenever they go online to search for information or do research. In this regard, Littlejohn et. al. (2012) argue that institutions need to place greater value on 'literacies of the digital', and better prepare their students and their own organizational processes to thrive in an age of digital knowledge practices (p. 547).

The European Institute of Innovation and Technology (EIT) published a report on the future of education for digital skills in 2022 where it tackled the issues of digital skills and digital specialism considering the supply of broadly defined education and training presented by both public and private institutions in Europe (P 04). The report highlights the fact that the digital transformation, accelerated by the COVID-19, induced digital surge of the past two years, requires a skills revolution in Europe. (p. 07) The same report indicates that digital skills have implications for inclusion and social cohesion, as well as for innovation and productivity. As a result of the COVID-19 digital surge, basic digital skills have become even more important for getting through everyday life, such as

being active within society and participating in basic democratic processes. (p. 07) The second chapter of this report evaluates the state of the art in the public and private supply of education and training in digital skills while its subsequent parts identify the main gaps of educational institutions in Europe regarding trainings in digital skills with a special focus on possible scenarios to bridge these gaps.

Unfortunately, Algerian universities and educational institutions did not work on similar reports and projects to assess the post-COVID 19 phase. In other words, the focus of the ministry of higher education since 2022 has become the investment in online platforms like MOODLE, developing new applications for students like PROGRES and encouraging university teachers to use virtual spaces. Nonetheless, what might have more priority is empowering our students to become discerning consumers of online information, critically evaluating sources, and effectively communicating their own ideas. Beyond mere understanding, digital dexterity unlocks the creative and productive potential of technology. From crafting multimedia presentations to collaborating seamlessly across virtual spaces, this skill set equips students to tackle academic challenges and future careers with confidence (Ashikuzzaman, 2023). However, the Algerian context presents unique challenges and opportunities in this journey towards digital fluency. Limited access to technology, resource availability, and the evolving landscape of online environments all demand tailored approaches. Recognizing this, this section embarks on a critical exploration of digital literacy and dexterity, unpacking their core components within the Algerian context. By understanding these vital skills and their significance, we can pave the way for empowering Algerian students to become successful navigators and creators in this ever-expanding digital world.

It is of paramount importance to explain to our students the differences between the skills they develop through using social media and the skills they need to navigate online content in an effective way. Thus, while social media skills and digital skills, digital literacy and digital dexterities do all relate to technology use and may seem to ordinary users as interrelated terms, they are significantly different. For instance, social media skills focus on specific platforms and activities like creating profiles, posting content, engaging with others, and using basic features. They are often self-taught or learned through casual use, and they can be used for entertainment, communication, and personal branding. On the other hand, digital skills encompass a wider range of capabilities, including using technology for communication, research, problem-solving, learning, and content creation. Also, they include basic computer literacy, internet navigation, and software applications. Thus, digital skills are essential for personal, academic, and professional success.

So, we can refer to individuals as digitally literate when they have a set of digital skills together with the understanding and ability to critically evaluate information, use technology effectively, and communicate responsibly in the digital world. As for digital dexterity, this term may overlap with digital literacy and is sometimes used interchangeably. Nonetheless, digital dexterity goes beyond literacy and focuses on the ability to use technology creatively and efficiently to solve problems, collaborate, and achieve goals. In other words, it requires fluency with various tools and applications, adaptability to new technologies, and problem-solving skills. In consequence, it would enable individuals to innovate and succeed in a rapidly changing digital landscape. Algerian university students need more than just social media skills. This research, therefore, is set out to underscore the most important digital skills that our students would need to thrive in this digital era where abundant content is a curse rather than a bliss. The next sections will delve into the research methodology of the present study as well as the data analysis that would shed light on the relationship between digital literacy and dexterity and learning outcomes among Algerian university students.

2.4 Purpose and Research Questions

This research aims to underscore the importance of fostering our students' digital dexterity to assist them in dealing with the abundance of content they are confronted with in online environments. On another hand, the present paper also sets out to disclose how the politics of Algeria in digitizing higher education has ignored the impact of the emerging pedagogies of abundance on Algerian students who often lack digital dexterities, critical digital literacy, and digital competence(s). In this research, I assume that digitalizing higher education in Algeria must not only be related to the number of platforms, applications and technological equipment that the ministry of Higher education has so far realized and offered. It must also be in terms of updating pedagogies, programs, and students' digital competences.

Given the complexity of the issue tackled in this investigative article, I employed a mixed method, combining quantitative data analysis with qualitative interviews to explore the lived experiences of 150 students from two universities (Oran 2 and Mostaganem) and 12 lecturers from the same two universities. The main question that this research seeks to answer is: Why is it essential for Algerian universities to equip students with digital dexterity to effectively navigate the intricacies of abundant online content and optimize their learning outcomes? As a tentative answer to this research question, I suggest the following hypothesis: By cultivating and improving Algerian university students' digital dexterities, they would be able to critically evaluate, synthesize, and apply information from abundant online content, and this would expectantly lead to enhanced learning outcomes.

3. Method

3.1 Methodological Framework and Data Analysis Techniques

This section displays the methodological framework of the study, encompassing both quantitative and qualitative data collection tools that were designed to uncover the weaknesses in digital dexterity and the lack of digital skills that our students need to detect and understand so as to face the abundance of online content, in addition to drawing university teachers' attention to the emerging pedagogies that would allow them to reshape their roles in an era of knowledge abundance. To achieve this, a random sampling approach was employed, focusing on students from two Algerian universities: Oran 2 and Mostaganem (N =150) to whom an online questionnaire was distributed. Also, 12 university teachers from the same two universities were purposefully selected to be interviewed. These 12 lecturers belong to different faculties and departments: Faculty of Law (Oran 2 University), Faculty of Economy (Oran 2 University), and Faculty of Foreign Languages (Mostaganem University: department of French, and department of English).

As the first data collection tool, the online survey instrument was designed and distributed online to 150 students, encompassing multiple-choice questions and Likert Scale items. This survey aimed to assess students' self-reported digital literacy skills, digital dexterity levels, and their perceptions of the relationship between these abilities and their learning outcomes. As for the second tool, semi-structured interviews were also conducted with 12 lecturers from the same universities to explore the lecturers' observations regarding students' digital dexterity, the challenges they face in navigating online content, and their perspectives on the impact of digital dexterity on student learning. The interviews were sent to the lecturers via email.

The collected data from both quantitative and qualitative methods underwent thorough analysis, following established procedures to ensure the validity and reliability of the findings. The details of these data analysis techniques are presented in the following section.

4. Results

4.1 Digital Dexterity and Learning Outcomes in Algerian Higher Education

This section presents the key findings from the survey administered to 150 university students in Oran and Mostaganem. As stated earlier, the online questionnaire aimed to assess their digital literacy skills, perceptions of digital dexterity, and preferred learning platforms.

a. Demographic Information

The participants included students from various age groups (18-20: 30%, 21-23: 40%, 24-26: 20%, 27+: 10%), years of study (first year licence: 25%, third year licence: 30%, first year master: 25%, second year master: 20%). This information is displayed in the following bar graphs:
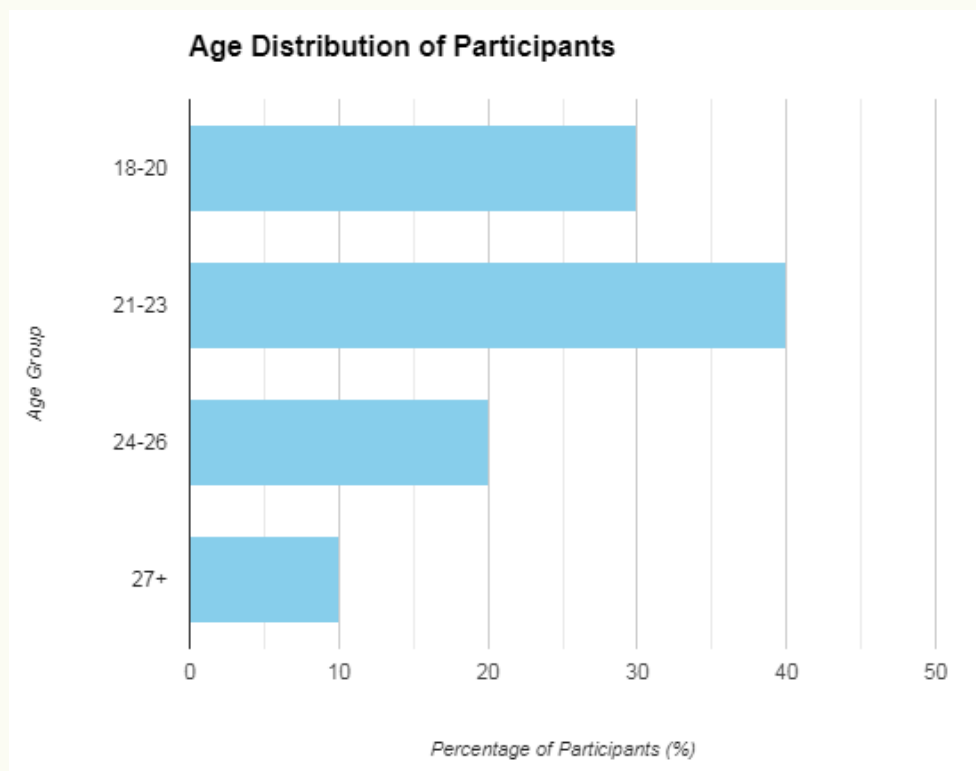

As the graph above shows, most of my participants are between 21 and 23 years old; that is to say, most of them are digital immigrants who are familiar with internet and digital tools, but they may not be as skilled as digital natives.

Years of Study Distribution of Participants
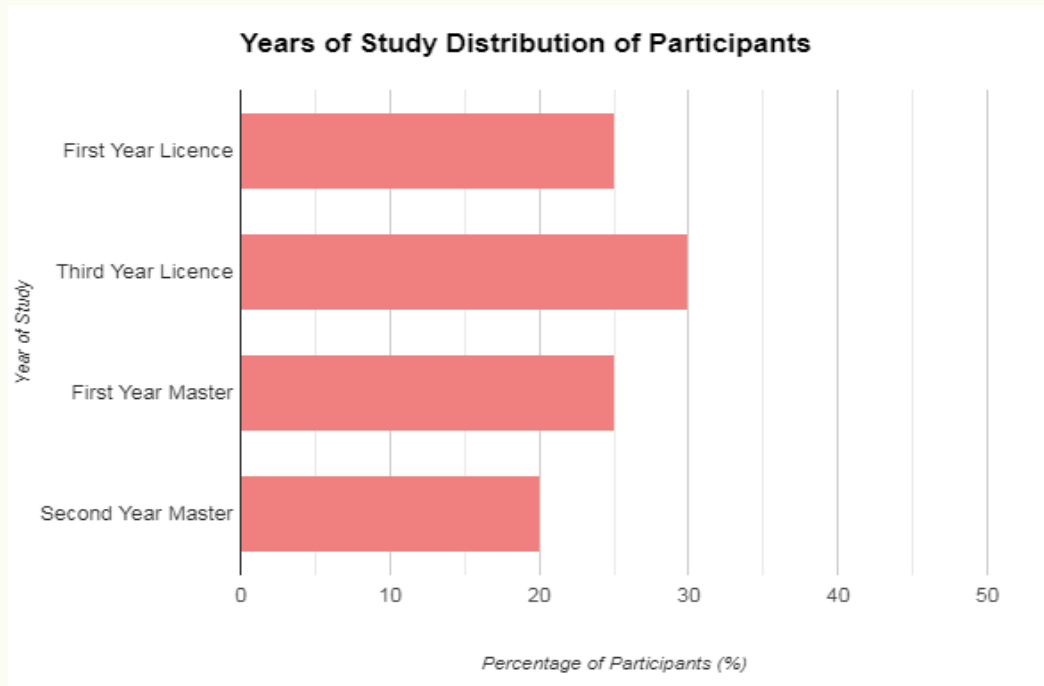
This graph shows that my participants belong to four different cohorts, i.e., I intentionally chose participants from Licence (BA) and others from Master. I estimated that such a selection would add credibility and replicability to the potential findings.

b.   Digital Literacy Skills

The findings revealed a range of digital literacy skills among the students. When asked about using online academic databases (Question 1), 43.3% reported using them "sometimes," while 26.7% used them "often" and "always." However, a significant portion (23.4%) reported using them "rarely" or "never."

Question 1: Using academic databases
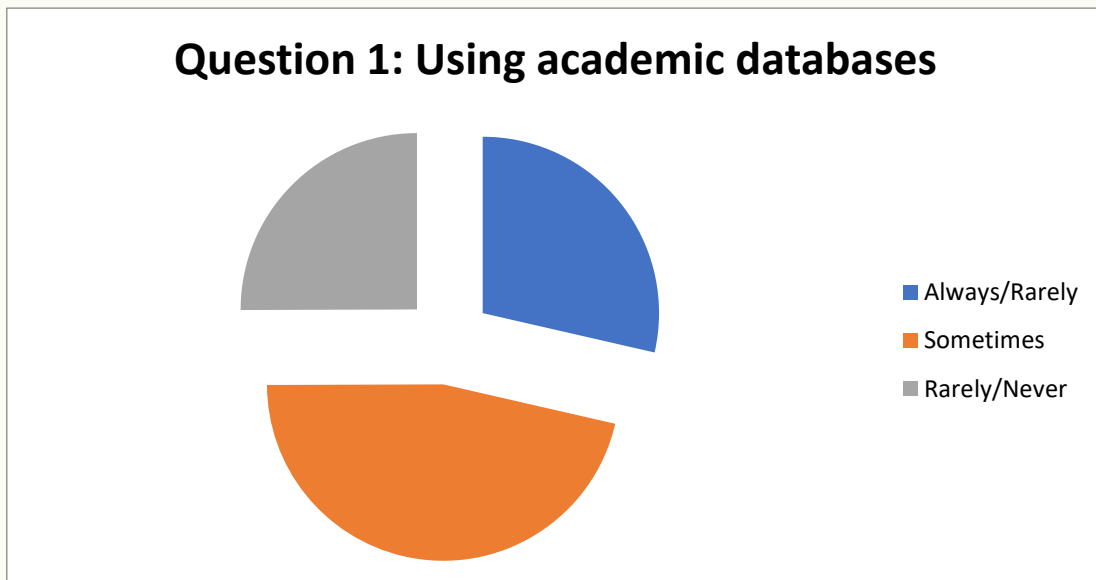
This graph shows that the percentage of students who do not use academic databases at all and that of those who always use them are very close which may reflect the students' awareness. On another hand, almost half of them revealed that they sometimes use the databases, and it may be obvious that this occasional use is related either to tests and exams or assignments.

Regarding information evaluation (Question 2), most students (72.7%) considered "source credibility" the most important factor. Analyzing comfort levels with collaborative tools (Question 3), a majority (82.7%) felt comfortable using all options (email, online document editing platforms, project management software).

The Likert-scale responses (Question 4) indicated a generally positive perception of digital skills. The average scores ranged from 3.8 ("somewhat confident") to 4.2 ("confident") for finding relevant resources and evaluating information. However, the average score for using online tools for learning was slightly lower (3.5), suggesting a potential area for improvement. The line chart below displays this:

Student Confidence in Digital Skills (Question 4)
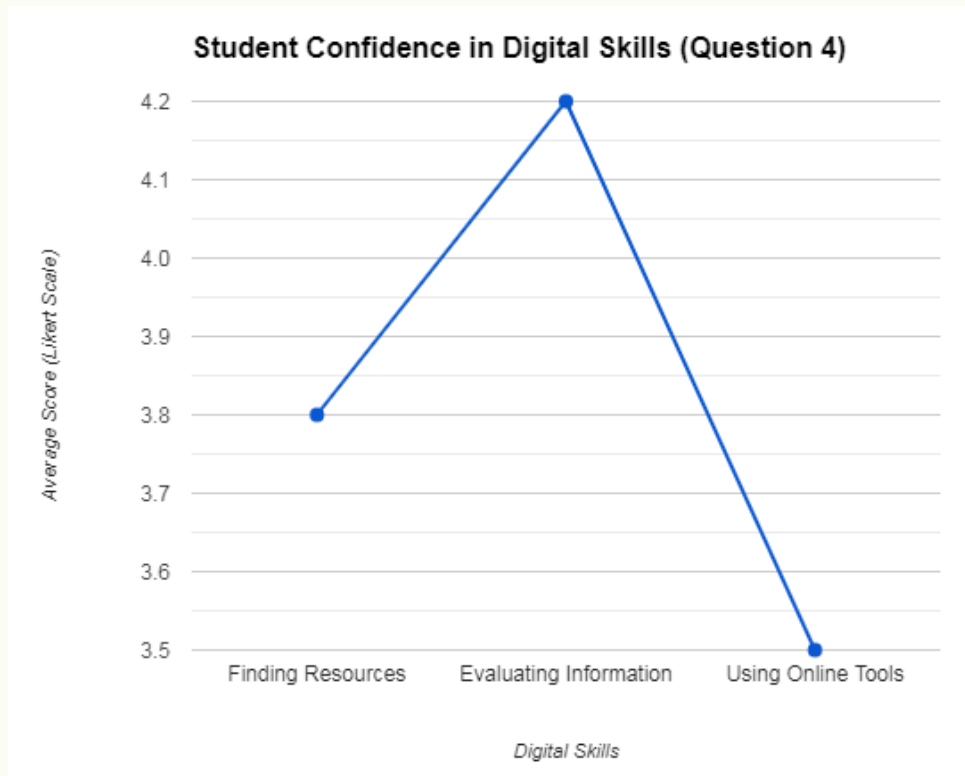
c.   Digital Dexterity and Learning Outcomes

Most students (85.3%) believed digital skills are essential for academic success (Question 5). Additionally, a considerable portion (66.7%) reported integrating online tools and platforms "often" or "always" into their learning process (Question 6). The open-ended responses (Question 7) revealed diverse ways students utilize online resources, with some focusing on academic databases for research, while others mentioned using online video platforms for lectures or social media for group communication.

Digital skills importance and Online tools integration
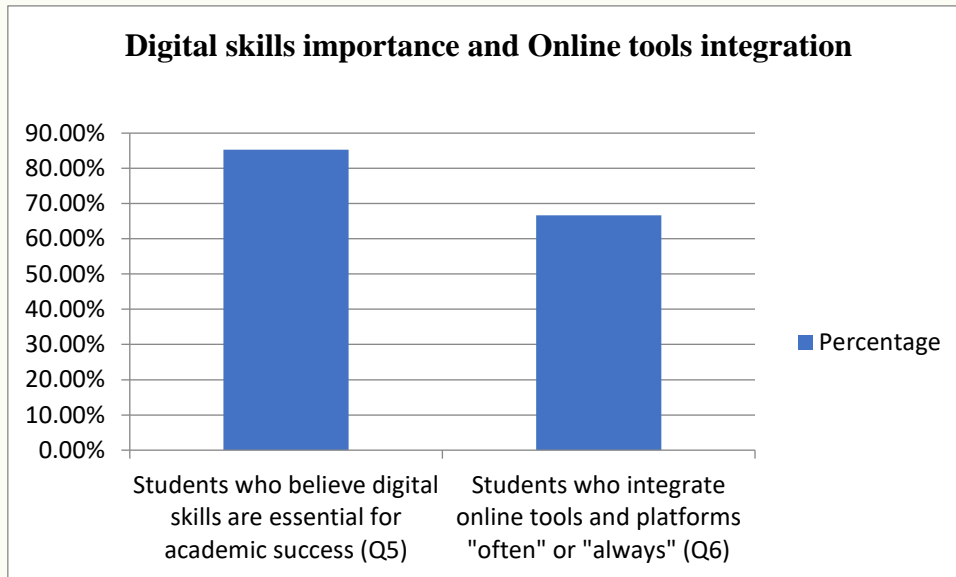
This graph reveals that most students assume that digital skills are essential for their academic success. Also, most students do integrate online tools and platforms in their learning learning process.

d.   Preferred Learning Platforms (Question 8)

The analysis revealed a preference for a variety of learning platforms. online video platforms (YouTube, etc.) were the most popular choice (72%), followed by social media platforms at 58%. And Learning Management Systems (LMS) like Blackboard or Moodle were used by 34.7% of students, and a small portion (5.3%) reported using other platforms.
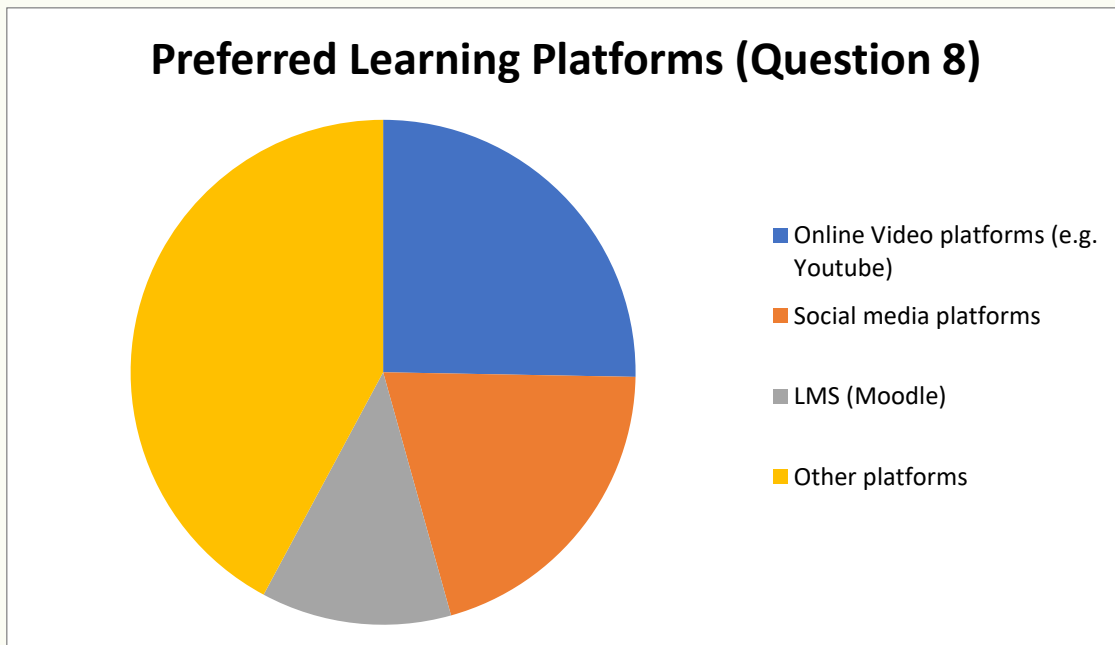
The previous chart clearly shows that most students prefer online video platforms (YouTube in particular) and tend to use social media platforms more than LMS platforms like MOODLE that the ministry designed as the only official online platforms for students and teachers alike.

4.2 Lecturers' Perspectives: Online Platforms and Pedagogical Challenges

The interviews with the 12 lecturers revealed both interest and challenges regarding online platforms like Moodle and Progress. While some lecturers expressed a willingness to explore these platforms ("I find Moodle's discussion forums interesting for promoting student interaction," - Lecturer, English Department), others highlighted ongoing difficulties with user interface and functionality ("Progress can be clunky at times, making it frustrating for both me and the students," - Lecturer, French Department, Mostaganem University).

a.   Challenges with Navigation and Integration

The lecturers' perspectives resonated with the potential shortcomings mentioned in the student survey regarding online tools. They observed that many students lack the skills to navigate these platforms effectively and integrate them into their learning process ("Most students haven't grasped the full potential of online resources available on Moodle," - Lecturer, Economics Faculty, Oran 2 University).

b.   Focus on Social Media vs. Academic Platforms

Interestingly, the interviews revealed a trend that mirrored the student survey results – a significant focus on social media platforms. The 12 lecturers indicated that students seemed more comfortable using social media for communication and collaboration compared to dedicated academic platforms ("The students are constantly on social media – can we leverage that for educational purposes?" – Lecturer, Law Faculty, Oran 2 University).

c.   Limited Research Skills on Online Platforms

The lecturers also identified a gap in students' ability to conduct research effectively using online platforms and websites ("Many students struggle to differentiate between credible and non-credible sources online," - Lecturer, English Department, Mostaganem University). This aligns with the student survey findings that suggested a need for improvement in information evaluation skills.

d.   Connecting the Dots

These findings from the lecturers' interviews highlight a potential disconnect between the affordances of online platforms and the current skills-set of both lecturers and students. While there appears to be a willingness to explore online pedagogies, navigating these platforms and effectively integrating them into the teaching and learning process requires further support.

5. Discussion

5.1 Limited Digital Dexterity and Online Learning

The student survey and lecturer interviews paint a similar picture: a need to address limited digital dexterity among students. The survey results revealed variations in student comfort levels with online resources and tools, while lecturers observed a lack of skill in navigating platforms like Moodle and Progress effectively.

Loan-Vergara ans Acrelius (2020) highlighted, in their research, a gap in digital literacy skills hindering students' ability to thrive in online learning environments during Covid19, and our students are still experiencing this gap as the results of the student's questionnaire revealed. To address this, targeted interventions such as digital literacy workshops and integrating technology skills within the curriculum could empower students to become more confident users of online platforms, as suggested in previous sections.

5.2 Embracing a Pedagogy of Abundance

The findings from this study highlight a critical need to bridge the digital divide in Algerian higher education. However, simply addressing the technical skills gap is not enough. We must move towards a learning environment that embraces a pedagogy of abundance. The latter emphasizes the vast number of educational resources and information available online, empowering students to become critical consumers and active participants in their own learning (Weller, 2011). This approach stands in stark contrast to the traditional model where knowledge is passively transmitted from instructor to student.

There are several compelling reasons to embrace a pedagogy of abundance in Algerian universities:

a) **Empowering Students:** By equipping students with the necessary digital literacy and critical thinking skills, a pedagogy of abundance fosters independent learners who can navigate the vast online world effectively. This empowers them to take ownership of their learning journey and become lifelong learners.

b) **Enhancing Learning Opportunities:** The abundance of online resources allows students to explore diverse perspectives, engage with multimedia content, and connect with a global learning community. This enriches the learning experience and provides opportunities for deeper understanding.

c) **Promoting Collaboration and Creativity:** A pedagogy of abundance encourages collaboration and knowledge sharing through online platforms and social media integration. This fosters creativity and innovation in the learning process.

d) **Fostering Critical Thinking:** The vast amount of information available online necessitates the development of critical thinking skills. A pedagogy of abundance equips students with the tools to evaluate information credibility, identify bias, and synthesize knowledge from diverse sources.

In the context of Algerian higher education, embracing a pedagogy of abundance can play a transformative role in preparing students for the demands of the digital age. By fostering critical thinking, information literacy, and collaboration skills, universities can empower students to become successful lifelong learners and active participants in a globalized world.

5.3 Challenges with Online Platforms and User-Centered Design

Both students and lecturers expressed difficulties with the existing online platforms used by the Ministry. The student survey might not have explicitly captured details about these challenges, but the lecturer interviews shed light on issues with user interface and functionality. This highlights the importance of user-centered design in developing online platforms for education. As advocated by Bates (2019), platforms should be designed with the needs and experiences of both students and lecturers in mind. Following their work, the Ministry could benefit from gathering students' feedback through surveys or focus groups to improve platform usability and ensure a smooth learning experience.

a. Social Media as a Learning Tool?

The student survey and lecturer interviews consistently pointed towards a student preference for social media platforms. While students might not be using social media for strictly academic purposes based on the survey, the lecturers' observation suggests a potential opportunity. Integrating social media literacy into the curriculum could address this by teaching students how to leverage these platforms for academic research and

collaboration. This aligns with the work of Smith et al. (2023) who support the incorporation of social media into pedagogy in a responsible and effective manner.

b.   Faculty Development and Online Pedagogies

The lecturer interviews revealed a willingness to explore online pedagogies, but also a need for support in navigating and utilizing these platforms effectively. This builds upon existing research on faculty resistance to change in educational technology adoption. As highlighted by Bates (2015) in his work on teaching in a digital age, traditional leadership models in higher education may struggle to keep pace with the rapid advancements in technology as it is the case with higher education in Algeria. This can lead to a lack of institutional support and professional development opportunities for faculty, hindering their ability and confidence to integrate technology effectively into their teaching practices. In fact, the findings of this study have echoed these concerns, emphasizing the need for Algerian universities to address faculty needs by providing targeted training and support programs to empower lecturers to embrace online pedagogies.

To bridge this gap, professional development workshops and training programs focused on the benefits and practical application of online pedagogies can be implemented. Equipping lecturers with the necessary skills and fostering a supportive environment can encourage them to embrace new teaching approaches that leverage the affordances of online platforms.

c.   Developing Research Skills for the Digital Age

Both data sources revealed a need to enhance students' research skills in the online environment. The student survey suggested a gap in information evaluation skills, while the lecturer interviews highlighted difficulties with differentiating credible online sources. Information literacy workshops specifically designed for online research would equip students with the tools and strategies to navigate the vast ocean of online information effectively. These workshops could emphasize critical thinking skills for evaluating the credibility of online sources, alongside techniques for finding scholarly articles and relevant online resources.

6. Conclusion

In response to the rapid shift towards online learning platforms in Algerian universities, this mixed-methods study aimed to investigate the critical gap in students' digital dexterity skills. This investigation explored two key aspects: firstly, the specific weaknesses students faced in navigating online academic resources, and secondly, the impact of these weaknesses on their ability to utilize the abundant amount of information effectively.

In brief, the key findings that this investigation has reached and therefore highlights are:

a)   Students demonstrated varying levels of comfort with online resources and tools.

b)   Lecturers observed a need for improvement in student navigation and utilization of online platforms.

c)   Both students and lecturers expressed difficulties with the user interface and functionality of existing online platforms.

d)   Students displayed a preference for social media, suggesting potential for integrating social media literacy into the curriculum.

e)   Lecturers expressed interest in exploring online pedagogies but require support in effectively utilizing these platforms.

f)   Students and lecturers lacked crucial research skills for the digital environment.

As for the implications that these findings have, they suggest that both students and lecturers require support in navigating the digital learning environment effectively to cultivate a pedagogy of abundance. This support should go beyond technical skills training and delve into the principles of critical thinking, information literacy, and fostering active learning strategies that leverage the vast online resources available.

Moreover, the findings of this study have significant implications for improving digital learning in Algerian universities. The need to bridge the digital divide necessitates a multi-pronged approach. Universities should prioritize initiatives that:

a)   Enhance student digital literacy: Targeted interventions such as digital literacy workshops and curriculum integration can empower students to become critical consumers of information within the online landscape.

b)   Improve user interface design: Platforms should be redesigned with user-centered principles in mind, ensuring accessibility and ease of use for both students and lecturers.

c)   Integrate social media literacy: By incorporating social media literacy training into the curriculum, universities can leverage student preferences for these platforms while fostering critical evaluation and collaboration skills – hallmarks of a pedagogy of abundance.

d)   Invest in faculty development: Providing lecturers with targeted training and support programs focused on online pedagogies will equip them with the skills and confidence to integrate online resources effectively into their teaching practices.

e)   Develop information literacy workshops: These workshops can equip students with the tools and strategies to navigate the vast ocean of online information effectively, emphasizing critical thinking skills and techniques for finding quality online resources.

By implementing these recommendations, Algerian universities can create a more robust digital learning environment that fosters a pedagogy of abundance. This will empower students to become independent learners, critical thinkers, and active participants in their own learning journey, preparing them for success in the digital age.

Overall, this research suggests a need for a collaborative effort involving universities, the Ministry of Higher Education, and faculty development specialists to bridge the digital divide in Algerian higher education. By addressing the identified gaps in digital dexterity and online learning skills, universities can create a more enriching and effective learning environment for the digital age to confront an abundance of content.

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