Legal education in the digital age: tensions, resistances and opportunities

Educación jurídica en la era digital: tensiones, resistencias y oportunidades

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Abstract

This article explores the convergence between traditional legal education and emerging technological skills, addressing the educational metamorphosis facing law in the digital age. Through a comparative assessment of curricula and interviews with practicing jurists, it examines the transformations needed in the academic curriculum to prepare 21st-century jurists. It highlights the tensions between tradition and innovation, underscoring the need to integrate advanced technological skills into legal education to ensure competitiveness and efficiency in professional practice. The study reveals a significant dichotomy among educational institutions: while some cling to traditional paradigms, others are moving towards an interdisciplinary education that combines law and technology. The resistance and benefits of using digital tools in legal practice are evaluated, underscoring the impor-

tance of training jurists with a deep understanding of emerging technologies and their impact on the legal field.

Keywords: Legal education; Technological skills; Academic curriculum; Artificial Intelligence; Educational transformation; Legal tech; Interdisciplinary education.

Resumen

El presente artículo explora la convergencia entre la formación jurídica tradicional y las competencias tecnológicas emergentes, abordando la metamorfosis educativa que enfrenta el derecho en la era digital. A través de una evaluación comparativa de planes de estudios de licenciatura en derecho y de un abordaje cualitativo con juristas en activo, se examinan las transformaciones necesarias en el currículum académico para preparar a los abogados del siglo XXI. Se destacan las tensiones entre la tradición y la innovación, evidenciando la necesidad de integrar habilidades tecnológicas avanzadas en la formación jurídica para asegurar la competitividad y eficiencia en la práctica profesional. El estudio revela una dicotomía significativa entre las instituciones educativas, pues mientras algunas se aferran a paradigmas tradicionales, otras avanzan hacia una educación interdisciplinaria que combina el derecho con la tecnología. Se evalúan las resistencias y beneficios del uso de herramientas digitales en la práctica jurídica, subrayando la importancia de formar juristas con una comprensión profunda de las tecnologías emergentes y su impacto en el ámbito legal.

Keywords: Formación jurídica; Competencias tecnológicas; Currículum académico; Inteligencia Artificial; Transformación educativa; Informática jurídica; Educación interdisciplinaria.

INTRODUCTION

The training of law students has traditionally focused on technical legal knowledge that addresses the different branches of this social science, such as constitutional, criminal, labor, commercial, and civil law. This combines theory and practice, addressing the analysis of legal cases and the interpretation of the law. Additionally, the training of lawyers is complemented by the development of skills in public speaking, negotiation, conflict resolution, drafting, and argumentation. Technology management does not seem to have priority in this training process, even though technology, particularly artificial intelligence (AI), continues to grow in importance in our daily lives.

According to Bezzazi et al. (2021), AI will contribute $15.7 trillion to global GDP by 2030, representing a 26% increase in the global economy. It is also changing the structure of everyday interactions, creating new practices that modify human behavior (Vershinina & Lyadova, 2023). Considering the above, future lawyers must develop the ability to practice law in the digital field (Sandeen et al., 2021), which necessarily requires updating the study plans and programs to better address technological advancement (Grinin et al., 2020). In this sense, there are two positions: on the one hand, the one that considers that

the jurist should be an expert in legal reasoning and leave the technical part to the engineers, much more widespread in legal circles, and the other, still incipient, that values as a necessity that jurists develop skills to incorporate technology into their daily practice and take a leap to digital law (Zermo-Dopico, 2022).

Consequently, the insufficient attention paid to the convergence between traditional legal training and the technological demands of modern legal practice becomes increasingly relevant in a context where the imbrication of technology in legal practice is becoming increasingly unavoidable and omnipresent. This is due to the increasing digitization of judicial processes, the proliferation of AI-based legal analysis tools, and the emergence of new areas of law intrinsically linked to technology, such as data protection and the regulation of cryptocurrencies.

Thus, this article presents an analysis of lawyer training in legal informatics and digital training, coupled with reflections from active lawyers on the use of technology in the professional practice of law.

ON LEGAL INFORMATICS AND ARTIFICIAL INTELLIGENCE

Legal informatics refers to technological tools designed to optimize and automate legal work, including case management applications, online hiring platforms, and legal research tools. These tools are essential not only for future lawyers to know but also to use to compete in the job market and provide better service to their clients (Janeček et al., 2021).

Additionally, legal informatics could improve the justice system itself. But with tools like Kleros, which propose decentralized arbitration through *blockchain,* how can a legal professional develop a critical analysis based on their legal knowledge if they lack the skills to understand these technological tools? (Wiegandt, 2022; Dylag and Smith, 2021). Similarly, the use of case management systems, databases of laws and precedents, or AI-powered text generation tools can help legal professionals quickly access relevant information and make informed decisions, analyze large amounts of data, and identify patterns and trends that may be useful for judicial decision-making, thus contributing to judicial transparency. To accomplish this, it is essential that legal professionals understand the scope and limitations of these technologies to know the extent to which they can delegate tasks to them (Drapezo et al., 2022).

In addition to the issue of access to the labor market for law students in general and the efficiency of the justice system, there is also a question of gender equality, since, according to Collett et al. (2022), there is a worrying gap, as men have a much greater command of information and communication technologies than women do. This is concerning, given that women are the majority in law schools across several countries, including Mexico (García-Corral, 2019), the United States (Katz et al., 2023), and France (MESR-SIES, 2021). Therefore, integrating computer skills training is not only an academic offering consistent with Sustainable Development Goals 4 (Quality Education) and 5 (Gender Equality) of UN General Assembly Resolution 70/01 (2015) on the 2030 Agenda for Sustainable Development, but also a necessity for gender equality.

Moving on now to the introduction of software specialized in the field of law, this allows the jurist to incorporate information gathered from databases to perform their work not only on the basis of their legal expertise but also on the application of empirical data (Vági, 2023). Just as the use of generative AI techniques has allowed for the elaboration and creation of legal texts much more quickly, as well as the analysis and search for patterns within the same databases (Surden, 2024). These technological innovations in legal informatics are known as *legal tech.*

Along with everything discussed, Collett et al. (2022) believe that 75% of future jobs will be related to information and communication technologies. Furthermore, OpenAI's findings (Eloundou et al., 2023) on how generative AI will affect the labor market indicate that knowledge-based occupations are among the most vulnerable to automation. This is because generative AI has the potential to use up-to-date factual data to drastically reduce the time required for tasks such as writing and transforming text, summarizing medium-length documents, providing document feedback, answering and generating questions, maintaining written data records, and preparing knowledge-based training materials, among others (Eloundou et al., 2023).

In line with the notion that lawyers are knowledge workers (DiDomenico, 2016) with direct exposure to automation, and that generative AI is advancing rapidly to improve the automation of these activities, research such as that by Susskind and Susskind (2015) argues that these changes will affect the legal sector as well as other human and social sciences that are increasingly using computer tools to produce a more refined and larger-scale analysis of their object of study. For all these reasons, it is essential to integrate subjects into curricula that allow lawyers to understand the digital ecosystem in order to, in this way, provide better legal advice, but also to understand how these tools are used, how to choose them, or how to create them by managing a team of developers.

From a regulatory point of view, the jurist also needs a deep understanding of the advances in AI, considering both the potential benefits and drawbacks of this technology. As is well known, AI has also been used for negative purposes, such as the creation of fake news and misleading content, as well as the defense of offensive opinions, which highlights the need for responsible development and use of this technology (Dalkir, 2021). This is why incorporating legal informatics into plans and programs of study is essential, considering three questions: what to learn, how to learn, and why learn in the field of digital practice.

DIGITAL TRAINING FOR LAWYERS

As already mentioned, digital training for legal professionals is an explicit requirement of the labor market and experts in the field (Bazurina et al., 2021). Upon examining, for example, the Digital Competence Framework for Citizens' DigComp report (2024), it can be seen that digital competence is considered a foundation for policy development in the European Union. DigComp identifies the key components of digital competence in five areas:

1. Information and data literacy. Identify, locate, retrieve, store, and analyze digital information, evaluating its relevance and purpose.

2. Communication and collaboration. Interact and participate in communities and networks through digital tools, managing digital identity.
3. Creation of digital content. Develop and edit new content, integrate prior knowledge, understand copyright and programming.
4. Security. Personal data and digital identity protection, as well as use insurance, and sustainable technology.
5. Problem solving. Identifying needs, making informed decisions about digital tools, solving conceptual and technical problems, and using technologies creatively (Vuorikari et al., 2022).

The DigComp framework aims to plan and design educational offerings in the countries. However, as with any recommendation, its implementation in Europe has taken longer to materialize, due to the pace of technological development and the variability in research methodologies. This makes it crucial to critically examine the available findings, specifically in the field of legal education. In the 2024 survey of the *American Bar Association* (ABA) on AI and legal education, it is noted that 55% of the law schools surveyed offer classes dedicated to teaching about AI, and 83% report curricular opportunities for students to learn how to use AI tools (ABA Task Force on Law and Artificial Intelligence, 2024).

However, as Ambrogi (2024) critically points out, it is imperative to contextualize these findings. They are based on responses from only 29 of the approximately 200 accredited law schools in the United States, which limits the generalizability of these results significantly. Despite this, the apparent discrepancy between optimistic media reports (Sloan, 2024) and a more sober analysis of the available data (Ambrogi, 2024) makes it clear that there is a movement towards the incorporation of AI in legal education, although its precise scope remains uncertain.

In this sense, the diversity of approaches towards AI is particularly noteworthy. Some institutions, such as Arizona State University and the University of California, Berkeley, are developing specialized AI programs (Sloan, 2024). Others are integrating AI concepts into existing courses or establishing dedicated research centers, such as the Vanderbilt AI Law Lab and Harvard's project on Artificial Intelligence and Law.

This variety of strategies reflects both the perceived importance of AI in future legal practice and the uncertainty about how best to teach it. As Professor Gary Marchant points out, "in five years, it will no longer be possible to be a successful lawyer without using AI" (Sloan, 2024). However, the optimal way to prepare students for this reality remains a subject of debate and experimentation. Hence, the relevance of the study presented below.

COMPARATIVE EVALUATION OF STUDY PLANS

From a curricular point of view, which includes the planning, selection, and organization of study plans and programs, at least two main types of curricula can be identified: closed and open or flexible, in terms of the subjects to be taken (Secretariat of Public Education, 2022). In the case of the former, the contents are structured in an organized way for all students pursuing a university degree, considering mandatory subjects that together define the acade-

mic path and the requirements for obtaining a university degree. In contrast, flexible curricula allow students to choose subjects beyond the compulsory content to structure their curricular path according to their needs and/or interests (Díaz-Barriga-Arceo et al., 2019).

These curricular spaces, called elective subjects, are chosen from an open offer corresponding to the university degree. Their main purpose is to update and strengthen disciplinary aspects of the profession directly related to the complexity of the object of the career, as well as provide students with the skills that will allow them to respond efficiently to the trends and demands of the labor market of their profession (Compte-Guerrero, 2013).

In these flexible curricula, incorporating emerging topics such as digital literacy and computer skills is much more feasible, especially because knowledge of subjects traditionally within the field of engineering can enhance law students' skills and better prepare them for the demands of the modern legal industry. An analysis of the academic offerings in lawyer training is presented below.

The analysis was carried out through a comparative evaluation of the study plans from the most prestigious law schools in the world, considering subjects related to legal informatics and digital training for the professional practice of the jurist.

The data collection methodology focused on analyzing the academic offerings of subjects related to the digital world at law faculties included in two rankings: the Times Higher Education World University Rankings 2022 and the QS World University Rankings by Subject 2021. Three groups were identified: the top 10 law schools worldwide according to the first ranking, the top 10 law schools in countries with a civil law tradition, and the top 15 law schools in Latin America according to the second ranking. An exhaustive search was conducted for required and elective courses related to legal informatics, law and technology, and digital literacy, using specific keywords and, in some cases, machine translation to evaluate the programs in various languages.

The analysis focused on identifying subjects that address the intersection between law and technology in undergraduate programs. The compulsory subjects were differentiated from the elective subjects, and the academic offerings of each group were compared, highlighting the inclusion of courses in legal informatics, digital law, and computer science. This approach allowed for an evaluation of how the different faculties integrate these topics into their curricula and how they prepare students to face the challenges of the legal field in the digital age.[1]

The following presents the state of the academic offering from a critical perspective. The first subsection examines trends in undergraduate academic programs on this topic, specifically how legal professionals are being trained in legal informatics and information technology law at leading universities worldwide. The second subsection explores the interest of various universities in promoting the study of digital justice and information technology law. Finally, the last subsection demonstrates the commitment of certain universities to equipping students with critical and argumentative tools.

1 The detailed methodology is described in Appendix 1, available at: https://bit.ly/metodologia-recoleccion-analisis-datos-marco-referencial

Trends in undergraduate academic programs on the topic

The evolution of undergraduate law programs reflects a growing awareness of the intersection between legal science and the digital world. However, this awareness has not yet translated into a radical transformation of core curricula. A comparative analysis of the most prestigious institutions globally reveals a significant dichotomy between the required curriculum structure and the elective courses offered.

In the core curriculum, the presence of subjects that link law with technology is remarkably scarce. Of the 38 faculties analyzed, only 10% have incorporated subjects of this nature into their basic curriculum. This reluctance to modify the fundamental corpus of legal training suggests a persistence of traditional educational paradigms that privilege a conception of law as an autonomous discipline, resistant to the influence of technological advances in its basic teaching.

However, this apparent resistance is offset by the proliferation of elective courses in digital law and legal informatics. 58% of the institutions analyzed offer courses in digital law, while 37% include legal informatics in their elective catalog. This dichotomy between the required and elective curricula suggests recognition of the relevance of these subjects, but also uncertainty about their place in the fundamental training of lawyers.

It is worth noting that this trend is not globally uniform. Law schools with an Anglo-Saxon tradition demonstrate greater flexibility and breadth in their technology-related course offerings compared to their counterparts with a civil law tradition. This divergence could be attributed to structural differences in educational systems, as well as to differing conceptions of the nature and scope of legal practice in the digital age.

Interest from various universities in promoting the study of digital justice and computer law

Institutional interest in promoting the study of digital justice and computer law manifests in various ways and to varying degrees. Some elite institutions, such as Harvard University, have opted to create programs specialized in integrating law with technology. Harvard's program *Law, Science, and Technology,* for example, represents a holistic approach that encompasses intellectual property and the legal implications of emerging technologies.

Other institutions have adopted a more modular approach, integrating specific areas of study within their existing programs. Columbia Law School, for example, has developed areas of concentration in data analytics, national security and privacy, and intellectual property and technology. This approach allows for specialization in a gradual manner without the need for a radical restructuring of the curriculum.

Particularly noteworthy is the emergence of innovative courses that transcend the traditional boundaries between law and technology. Subjects such as *Statistical Inference in Law* at Stanford and *Computer Science for Lawyers* at Harvard reflect recognition of the need to equip future lawyers with advanced technical skills.

However, it is important to remember that the digital skills of the teaching staff in this subject are fundamental to undertaking such a transformation. It is important to note

that research shows that most teachers lack the knowledge and skills to effectively integrate technology into the classroom (Alnasib, 2023).

In the Latin American context, a trend towards interdisciplinarity is exemplified by initiatives such as those of the University of Rosario in Colombia. Its "academic specialization" approach allows law students to explore fields such as machine learning or blockchain, fostering a more comprehensive understanding of the legal implications of emerging technologies.

The purpose is to equip students with critical and argumentative tools

The integration of technological subjects into law programs goes beyond the mere acquisition of technical skills. An underlying purpose is evident: developing students' critical and argumentative skills adapted to the complexity of the contemporary legal environment.

The inclusion of digital literacy and computer science courses in law programs is not limited to familiarizing students with computer tools. Rather, it seeks to foster a deep understanding of the technological principles underlying many contemporary legal disputes. This approach aligns with Benfeld's (2017) observation that there is a trend in legal education toward creating greater awareness of the practical importance of university training.

Courses such as *Algorithms, Rights, and Responsibilities* at Harvard or *The Digital Transformation of the State and Administration* at Humboldt University in Berlin exemplify an approach that goes beyond the mere application of law to technological contexts. These courses foster a critical analysis of the ethical, social, and legal implications of emerging technologies, preparing students to address unprecedented legal dilemmas.

The introduction of data analysis and statistics subjects into law programs, such as *Legal Analytics* at Maastricht University, reflects a recognition of the growing importance of argumentation based on empirical evidence in the practice of law. This approach serves a dual purpose. On the one hand, it equips students with advanced analytical tools; on the other, it fosters a healthy skepticism towards claims unsupported by data.

Ultimately, the observed curricular evolution points toward the training of legal professionals capable of navigating fluidly between the legal and technological worlds. As Quezada-Castro et al. (2022) point out, technology and reality are linked in many aspects of human life, and law is no exception. The ability to argue effectively in this hybrid context is emerging as an essential competency for the 21st-century legal professional.

Conclusions on the comparative evaluation

The results evidence a lack of long-term vision in the training of legal professionals. Although it is important that law students have the option of including elective courses in legal informatics and digital law in their study programs, it is worrying that these courses are not included in a mandatory way. Technology is increasingly present in the legal field, and it is essential that future lawyers are familiar with its application (Khasanova, 2022).

This analysis, therefore, shows that, although the transformation of law programs in response to the digital revolution is still incipient and uneven, the trends observed suggest a

growing recognition of the need to equip future lawyers with critical and argumentative tools adapted to an increasingly technological legal environment. The challenge for educational institutions could lie in finding a balance between preserving the traditional foundations of law and incorporating digital skills essential to contemporary legal practice. At least, this is the intuition that will be contextualized in the next section through a qualitative analysis.

QUALITATIVE ANALYSIS: METHODOLOGY

To complement the analysis of curricula and to understand legal professionals' perspectives on the incorporation of digital technologies into professional practice, it was decided to interview legal professionals practicing in different areas of law and in various positions to capture their experiences on this topic. To carry out this part of the study, a qualitative research approach was chosen, as it seeks to interpret social phenomena and processes in the particular context in which they occur (Ramírez-Elías and Arbesú-García, 2019) to understand the experiences from the participants' perspectives (Fuster-Guillén, 2019).

Qualitative research seeks to integrate small samples of people who share a situation or phenomenon under study, in this case, active law professionals, so they are intentionally selected and participation is voluntary (Ortega-Pérez et al., 2023). Regarding data collection, a semi-structured interview was chosen, which allows understanding the situation under study from the interviewee's perspective by breaking down the meanings of their experiences (González-Vega et al., 2022).

Participants

Seven legal professionals participated in this study. The selection criteria were: a similar number of men and women, of different ages, and with varied years of experience, from diverse areas of law, and with a variety of positions. Table 1 below shows the profile of the participating legal professionals.

Table 1
Participant profile

ID	Gender	Age	Branch of law	Years of practice	Position
P1	M	42	Corporate	17	Partner at firm
P2	F	50	Telecommunications	26	Researcher
P3	M	51	Administrative	31	Circuit magistrate
P4	F	40	Fiscal	16	Tax expert
P5	M	35	Technological	14	CEO of firm
P6	M	60	Economic competition and administrative protection	35	Litigant
P7	F	47	Civil	25	Director of a law firm

Source: Own elaboration

Data collection

To collect the data, as already mentioned, a semi-structured interview was used, which involves following a guide of suggested questions, with the flexibility to delve deeper into specific topics that arise in the conversation and are considered relevant to the research process (Villarreal-Puga & Cid-García, 2022). The interview was conducted using the following triggering questions: What legal informatics courses did you take at university when you studied law? How was the use of digital technologies when you entered professional practice? How did you acquire the skills to use digital technologies in your professional practice? How do you think the use of digital technologies in legal practice has evolved? What do you consider to be the main obstacles to incorporating digital technologies into legal practice? How do you think the incorporation of artificial intelligence will affect legal practice? How do you think legal professionals should be trained in the use of digital technologies? How do you consider the digital skills of legal professionals in Mexico to be compared to those in other countries?

The interviews were conducted virtually (via Zoom platform), lasted an average of 60 minutes, and were recorded with the consent of the participants. These files are under the digital custody of the researchers, and no one else has access to them. Subsequently, transcripts were made of each interview until they were integrated into a single file. Certain fragments are reproduced in this text, and we identify them using indentation and indicate, between parentheses, the participant with the letter P followed by their number, according to the conventions of qualitative analysis.

Data analysis

The information analysis was conducted using the constant comparative method, a grounded theory approach (Corbin & Strauss, 1998). Based on this method, a first reading of the interview transcripts was conducted to identify units of meaning, which were subsequently labeled and grouped into categories, assessed for similarity, and further refined until categories and subcategories emerged (Richards & Hemphill, 2018). The above was done with the three coding moments in mind: open, axial, and selective. In the first, which was mostly descriptive in nature, units of meaning were identified, that is, concepts that represent phenomena; in the second analytical moment, the categories were related to the subcategories through axial coding. A third stage refines the categories, integrates them, and identifies metacategories through selective coding.

During the analysis, no specialized software was used; instead, the analysis was conducted manually, assigning each unit of meaning a consecutive number and an identifier for the interviewed participant. Thus, P1 represents the first participant, P2 the second, and so on up to P7, the last.

To establish the validity and reliability of the results, the categorization process described above was first carried out independently by each researcher and subsequently compared. Ultimately, the results reported in the study were the product of consensus and therefore adhere to the criterion of researcher triangulation, which involves the interpretation by more than one researcher. According to Aguilar-Gavira and Barroso-Osuna (2015), this approach enhances the quality and validity of the information by incorpo-

rating multiple perspectives on the same object of study, eliminating the bias of a single researcher and thereby promoting credibility (Patton, 2015).

RESULTS

To be consistent with the criteria of qualitative research, the results are based on an inductive analysis; therefore, the categories and subcategories emerge from the empirical work rather than the theoretical framework. Induction, in qualitative terms, arises because it begins with reading—in this case, the interview transcripts—where units of meaning are first identified, and subsequently, central themes or categories of the object of analysis (Arbeláez-Gómez & Onrubia-Goñi, 2014).

In the analysis of the interviews, three categories emerged, each with subcategories shown in Table 2.

Table 2
Categories and subcategories of interview analysis

Categories	Subcategories
University education	Use in university
	Acquisition of skills
	University training
Professional practice	Need
	Software
	Benefits
	Resistance
Foresight	Evolution
	Area of technological development
	Legal informatics in Mexico

Source: Own elaboration

The results are shown according to the categories that emerged from the analysis: university education, professional practice, and foresight.

University education

This category includes units of meaning that refer to the protagonists' university experience with technology, as well as the training received from curricular disciplines to address professional practice. It also includes the views of practicing professionals on how future lawyers should be trained.

Thus, the participants first describe the tension between tradition and innovation in the teaching of law.

> A professor failed me on an exam because instead of having the codes on paper, I had them on my computer. So not only was I not taught anything about using technology to practice law, but there was also a hostile attitude towards it (P1).

In contrast, there are the visionary universities that pioneered the incorporation of the Internet, although not necessarily for legal matters.

> When I was a student, computers weren't even the norm, although at the university where I was, there were some, because it was one of the pioneers that brought the Internet to Mexico; there was Internet, but it wasn't used for legal purposes (P2).

Of those that did consider incorporating technology into the curriculum, they only provided training in basic software packages.

> I think something like computer software, but just software packages, not something geared towards legal practice (P7).

While others were already focused on the use of technology in legal matters.

> We had a subject called legal informatics, we had incipient thesauri and databases with jurisprudence (P3).
>
> They gave us a computer lab and taught us search techniques for jurisprudence (P4).

However, given that technology in legal practice is a relatively recent topic in university education, some lawyers recount how they came to use technology, whether out of curiosity or necessity.

> It was out of personal interest and because I had access to technology. I consider myself one of the few judges who use artificial intelligence for their work (P3).
>
> I never took a course on how to use technology to manage an office; it was necessity that led me to learn (P7).

However, as the use of technology in legal practice has become more evident, awareness has grown of the need for the university curriculum to incorporate it transversally and specifically for legal issues.

> That the degree program not only teaches law, but also includes subjects from basic programming language (P6).
>
> I believe that they do need to learn not only how to use technology but also how it works (P5).

Professional practice

This category groups units of meaning related to the use of technology in the practice of law. Here, evolution over time can be identified. It ranges from a very basic use to its use for case resolution, especially since the pandemic.

> As a lawyer in my early roles, computers were practically like typewriters, and at most for sending emails (P2).
>
> Note that in the first office I was in, we used databases for consulting cases, and their use was mandatory (P4).
>
> Basically, with the pandemic, we started with a case management system that both lawyers and clients can consult; before that, we only had the firm's website with general information (P3).

Furthermore, technological advancements have enabled the development of tools focused on legal practice, leading to their everyday use.

> We use certain artificial intelligence applications to validate customer profiles (P1).
>
> As a judge, I use specialized software developed by the court itself, as well as a comprehensive case-tracking system to which the records of sentences are added (P3).

This has optimized legal work, reducing the workload, and broadening horizons.

> I believe it has greatly facilitated the work; it is more efficient and is less costly for the client (P6).
>
> I use ChatGPT, and it has helped me reduce my workload by 80% by quickly providing information about the cases I am working on (P5).
>
> I believe that the use of technology will help lawyers to diversify into different areas of law and to produce more knowledge and make decisions faster (P2).

Although resistance is always present, it is basically due to a lack of knowledge and/or competence in using technology.

> Basically, the lack of knowledge of non-digital natives about technology means they don't feel safe using it; it seems very risky to them (P1).
>
> The main resistance stems from a lack of knowledge, from not knowing that technological resources exist that can facilitate work (P3).
>
> I still know lawyers who ask the secretary to print them out because they can't read a document on the computer; they still do it by hand and correct it by hand (P6).

Foresight

This category refers to the immediate future of digital technologies in legal practice and to how they have evolved, distinguishing between workplaces that have incorporated technology according to need and those that were born digital.

> There is a big difference between the offices, as there are some that were born totally digital and have no physical headquarters, in addition to using artificial intelligence for everything, and others that continue to work totally in a traditional way (P1).
>
> It began with the use of the Internet for consulting laws, later it was used as a means of communication, now the electronic signature (P2) has been implemented.
>
> Since the advent of the Internet, everything has become electronic and no longer physical, then we moved to multimedia information and now everything is in the cloud (P3).

Or even in those areas of legal practice that have opened specific areas for technological innovation.

> In the offices, they are opening technology areas, making technology committees (P4).
>
> There is a legal innovation department in both the court and the Federal Judiciary Council, which began last year developing electronic case files. (P6).

Finally, it should be noted that although Mexico has incorporated technology into legal practice, it still needs to keep pace with other countries.

> I believe that lawyers at the international level have this great area of opportunity, because we are highly conservative, so that has caused a global delay (P1).
>
> It strikes me that most of the firms specializing in intelligence and innovation aren't Mexican. Most are foreign, and there are even many...South Americans (P7).

DISCUSSION AND FINAL CONSIDERATIONS

The comparison between the curriculum analysis and the perspectives of the legal professionals interviewed reveals a significant gap in the adaptation of legal education to technological advances. While the analysis of curricula shows limited inclusion of technological subjects in the basic curricula, the optional offer is broader. This disparity reflects persistent tension between tradition and innovation in legal education. However, this dichotomy between mandatory and elective courses may perpetuate an inequality in technological preparedness among future lawyers, leaving some at a competitive disadvantage. This gap becomes even more apparent when we consider that, as mentioned in the introduction, AI will contribute to a drastic increase in global GDP in the coming years (Bezzazi et al., 2021; Vershinina & Lyadova, 2023).

On the one hand, there is institutional resistance to modifying core curricula, while on the other hand, there is a growing demand for technological skills in professional legal practice. Interviewees highlight the potential of technology to diversify and accelerate legal work, aligning with the trend observed in some institutions of creating specialized programs that integrate law and technology. However, this adaptation seems reactive rather than proactive, which could result in training that always lags behind the needs of the labor market or what is needed to activate lawyers' critical apparatus when faced with a proposed tool in their work (Wiegandt, 2022; Dylag & Smith, 2021).

On the other hand, the ABA Task Force on Law and Artificial Intelligence study (2024) suggests widespread adoption of AI education in law schools. However, our more comprehensive analysis and qualitative approach qualify these findings, revealing persistent cultural and institutional barriers. The discrepancy between these studies underscores the need for rigorous methodology in the coming years to assess the true extent of technological integration in legal education amid rapid digitization (Collett et al., 2022; Eloundou et al., 2023).

Furthermore, this study shows that the integration of technological skills into legal education (Sandeen et al., 2021) represents a paradigm shift in the conception of the role of the jurist in contemporary society. This is reflected in the emergence of policies (European Commission, 2024) and innovative courses that transcend the traditional boundaries between law and technology, which aligns with the observation that generative AI has the potential to drastically reduce the time required for tasks such as writing and transforming text, summarizing documents, and preparing materials for training (Surden, 2024). However, there is a risk that these subjects will become mere superficial additions to the curriculum without a true integration into fundamental legal training.

Consequently, the effective implementation of this educational transformation faces significant challenges, particularly with regard to the technological skills of the teaching staff. Resistance to technological adoption is attributed mainly to ignorance and the lack of familiarity with the new tools.

This situation raises questions about the capacity of educational institutions' programs to adequately prepare the next generation of lawyers if the educators themselves are not up to date with the relevant technologies (Alnasib, 2023).

In conclusion, while the curriculum analysis reveals a gradual evolution toward the incorporation of technological competencies in legal education, which Grinin et al. (2020) had previously highlighted, the perspectives of the professionals interviewed underscore the urgency of accelerating this process. The gap between academic training and the demands of contemporary professional practice suggests the need for a fundamental rethinking of legal education. Despite the evident need for change, there is a risk that institutional inertia and resistance to change within the legal field could significantly slow this necessary transformation, leaving many behind graduates ill-prepared for the realities of modern legal practice.

AUTHORS' CONTRIBUTION

Philippe Prince-Tritto: Project management; Formal analysis; Conceptualization Data curation; Writing - original draft; Writing - revision and editing; Investigation; Resources; Software; Monitoring; Validation; Visualization; Fundraising.

Sara-Elvira Galbán-Lozano: Formal analysis; Data curation; Writing - original draft; Writing - revision and editing; Research; Methodology; Resources; Supervision; Validation; Visualization; Fundraising.

Mónica-del-Carmen Meza-Mejía: Conceptualization; Writing - original draft Writing - revision and editing; Research, Resources; Supervision; Validation; Display Acquisition of funds.

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