Reforming Saudi Legal Education for the Digital Age

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Abstract

This article reviews previous industrial revolutions and focuses on the immense technological advancement achieved by the Fourth Industrial Revolution and its impact on the quality of legal education in Saudi Arabia. It demonstrates how these technological developments affect the legal job market and the evolved needs it has created. This study finds that legal education in the Kingdom does not adequately engage with the job market requirements and the changing demands for legal services created by the Fourth Industrial Revolution. Therefore, this research suggests that legal education institutions in the Kingdom need to take necessary actions to restructure law curricula and specialties so that graduates can meet the legal needs generated by technological advancements. Reforming legal education benefits businesses, governments, individuals, and society at large, as law is the science that regulates behaviors, protects rights, and imposes obligations. This study presents mechanisms through which legal education institutions can adapt to the requirements of the Fourth Industrial Revolution. Examples of these mechanisms include developing digital literacy among law students and teaching courses such as Technology Law, Technological Legal Innovation, and Legal Entrepreneurship. Training students in future skills is also among the most important strategies to be adopted, especially since these skills will distinguish human legal consultants from machine legal consultants.

Keywords: legal Education, law, industrial revolution, technology

1. Introduction

The world is witnessing radical developments and changes that are reshaping its features and impacting educational curricula and methods in general, and legal education in particular. These changes could be climatic, such as climate change, or in the form of a pandemic like the Coronavirus (Covid-19), or technological advancements as seen in the Fourth Industrial Revolution, which encompasses various technologies such as artificial intelligence, virtual reality, augmented reality, robotics, and many other technologies.

Undoubtedly, these developments, especially those of the Fourth Industrial Revolution, have a direct impact on the legal world, from education and qualification to the practice of legal professions. Locally, courts in Saudi Arabia have started holding sessions virtually and some have become fully digital courts, with trainee lawyers being able to train in the legal profession virtually, and automation continues to sweep the legal world from all directions.

In light of these developments, legal education institutions in the Kingdom must prepare students for future jobs, entrepreneurship, and legal innovations. This necessitates a reevaluation of legal education curricula and methods and a restructuring of its specialties to align with the developments of the Fourth Industrial Revolution, contributing to the graduation of a legal generation capable of innovating and creating in providing the legal services needed by society, entrepreneurs, and governments.

This article addresses the developments of the Fourth Industrial Revolution and their impacts on legal education. It also reviews previous industrial revolutions and how education contributed to their development and benefited from their technologies and advancements. The importance of this article lies in its focus on a current issue that the world is experiencing, and the developments of which experts and specialists are studying its implications on the present and professional future. Vision 2030 of the Kingdom has not overlooked these radical changes, giving them significant attention through its vision programs. The Human Capacity Development Program, according to its media document, aims to build competitive capacities, develop future skills, and enhance knowledge through a solid educational foundation, preparing Saudi youth for the future local and global job market. The article gains further importance as one of the pillars of the Human Capacity Development Program focuses on developing the knowledge and skills needed to exploit future opportunities. This pillar includes several initiatives, such as reviewing academic

specialties and involving employment entities in designing and implementing curricula, among other initiatives aimed at developing advanced skills to lead the Fourth Industrial Revolution, offering multiple pathways to success with support and development of technical and vocational pathways.

The article problem centers on the rigidity of legal education in the Kingdom and its weak response to the developments of the Fourth Industrial Revolution. These developments necessitate a reassessment of teaching methods and a restructuring of legal specialties and curricula to align with the current stage, especially in legal education, as it is the field that protects rights, resolves disputes, and contributes to establishing principles of integrity and justice.

With the emergence of technologies such as artificial intelligence, big data, and blockchain, there is a reduced need for many jobs, but conversely, there is an increased need for many other jobs, including the need for lawyers and legal professionals specialized in such technologies, whether for protecting intellectual properties, ensuring compliance and adherence to relevant laws and regulations, or for other legal services. Governments also need to regulate the operation of these technologies and thus require legal experts capable of drafting laws that regulate and set the ethics of innovating and using such technologies. Against all this backdrop, the problem of this article lies in the lagging of legal education institutions and their failure to equip students with the skills and knowledge of the Fourth Industrial Revolution that the current and future legal job market needs.

In light of the research topic and its importance, and addressing its problem, this article explores several key areas within the scope of the research plan. It investigates the historical background of industrial revolutions and how they have influenced legal education in Saudi Arabia. It also examines how the Fourth Industrial Revolution differs from its predecessors, identifying its most significant technologies and developments, and analyzing their impact on legal education. Furthermore, it considers the mechanisms and methods that legal education institutions can adopt to keep pace with these technological advancements. Lastly, the article explores how legal education institutions can cultivate a generation of lawyers equipped with the skills for innovation and creativity, prepared to thrive in the current and future job markets.

In addressing the research question on the impact of the Fourth Industrial Revolution on legal education, this article draws upon previous research and adopts a comprehensive methodological framework. While there are no local studies specifically examining the effects of the Fourth Industrial Revolution on legal education in Saudi Arabia, numerous international studies offer valuable insights. For instance, Stephen R. Smith (2023) highlights that American legal education is at a critical juncture due to technological advancements (Smith, Stephen R., 2023). Smith emphasizes that the evolving nature of technology, impacting sectors such as communication, medicine, and the economy, will necessitate legal professionals with specialized, future-oriented skills. Smith's study argues that restructuring legal education in the United States to address these developments is essential to avoiding social disruption and ensuring the continued strength of the legal system. While Smith's research focuses on the United States, this article applies similar considerations to Saudi Arabia, aiming to explore how the Kingdom's legal education can adapt to these global technological changes.

Similarly, Anne Thanaraj discusses how law schools must prepare for the future by integrating technology into their educational frameworks (Thanaraj, Anne., 2023). Thanaraj proposes several strategies, including the incorporation of digital literacy into curricula, the development of interdisciplinary specialties, and the creation of opportunities for students to engage in innovative problem-solving. These strategies are essential for equipping law students with the skills required to navigate the digital world. While Thanaraj's research emphasizes the broader global context, this article aims to focus specifically on developmental strategies that align with the unique legal education landscape in Saudi Arabia, considering its cultural and institutional frameworks.

To thoroughly address these article questions, a descriptive and analytical methodology was employed. This approach involved examining the historical background of industrial revolutions and analyzing their implications for current and future legal education. The article also draws upon reliable international sources and peer-reviewed research, utilizing a comparative approach by analyzing international experiences in adapting legal education to technological advancements. Expert opinions and scholarly insights regarding the evolution of legal education were considered to shape the conclusions and recommendations of the article.

The structure of the article plan is designed to systematically address the impact of the Fourth Industrial Revolution on legal education. Part I reviews the history of industrial revolutions and provides an overview of legal education in Saudi Arabia. Part II focuses on the specific developments of the Fourth Industrial Revolution, exploring how these technological shifts necessitate the restructuring of legal education. Through this structured analysis, the article seeks

to provide actionable recommendations for aligning legal education in Saudi Arabia with the demands of the rapidly evolving technological landscape.

2. Industrial Revolutions and Legal Education in Saudi Arabia

Decades ago, the astounding technological advancements we witness today were unimaginable. Humanity has undergone various industrial revolutions that are interlinked and successive. These industrial and scientific revolutions undoubtedly impact all aspects of life, including education, both directly and indirectly. Historical lessons reveal a close relationship between successive industrial revolutions and education systems, characterized by depth, comprehensiveness, and continuity (Ali Asaad Watfa., 2020).

Since law touches upon all aspects of life, legal education must adapt to the changes brought about by industrial revolutions and engage with them to maximize benefits for legal outcomes and society as a whole. Restructuring legal education to align with technological revolutions will produce a generation of legal professionals marked by intelligence and innovation. Looking at the recent past, concepts like electronic litigation, remote training for lawyers, or even the idea of an artificial advisor were inconceivable. Now, all of these are realities, and the near future promises significant changes and rapid transformations, necessitating a shift in legal education, particularly in Saudi Arabia, where legal education still faces numerous challenges. This research will address legal education in Saudi Arabia and its adaptation to the changes brought about by the Fourth Industrial Revolution.

For further detail and analysis, this part is divided into two sections: the first section defines industrial revolutions, while the second section introduces legal education in Saudi Arabia.

2.1 Industrial Revolutions

A revolution is a transformative event or a series of events and actions that aim to change a nation, region, society, industry, or more recently, the business world (P. P. Groumpos., 2021). In political science, a revolution signifies a sudden radical change in power and political systems, often occurring when the populace revolts against the government due to tangible oppression and political inefficiency (F. A. Hayek., 1963; Gavin Weightman., 2020). However, this definition of revolution does not apply to industrial, scientific, and business revolutions, as each has different triggers and objectives. The term “industrial” is frequently paired with “revolution” without considering the broader implications of the word “revolution” (Groumpos, supra note 4, at 464).

There is no single agreed-upon definition of an industrial revolution because these revolutions are human interpretations of history, leading to varied understandings and explanations (Klaus Schwab., 2017). Generally, a revolution is recognized as a comprehensive system of fundamental qualitative changes that occur in a material, social, or intellectual structure, fundamentally altering its identity. This is often exemplified in the fields of science and technology, such as the first, second, and third industrial revolutions. The concept of an industrial revolution often implies a radical upheaval caused by technological innovation in the societal structure, economically, politically, and socially (Watfa, supra note 3, at 30.).

Industrial revolutions are considered the most significant transformation in human history since the Neolithic era (Hayek, supra note 5, Weightman, supra note 5, & R. Fremdling., 1996). These revolutions have occurred successively over the past decades, contributing to each other’s development. The following paragraphs will review these industrial revolutions.

2.1.1 The First Industrial Revolution

The manifestations and features of the First Industrial Revolution began to emerge in the mid-18th century, although historians have emphasized the difficulty of pinpointing an exact start date (Schwab, supra note 7, & P. Deane., 1965). This revolution brought about a pivotal change in all aspects of human life, particularly in education, work, and production. Humans transitioned from relying on human and natural forces for production to depending on machines and mechanical devices, which significantly saved effort, time, and money (Watfa, supra note 3.). The most notable feature of the First Industrial Revolution was the reliance on steam power to mechanize production (Schwab, supra note 7.). This revolution was driven by the increasing demands of international trade to boost production and the heightened investments by capitalists in inventions that enhanced production and generated financial returns. For example, an entrepreneur invested in James Watt’s invention of cooling systems that allowed steam engines to run longer. The inventions of the First Industrial Revolution were diverse and touched many aspects of life, facilitating maritime travel through steamships, increasing agricultural production through farming and harvesting machines, inventing chemical fertilizers, and using coal for energy instead of wood, among other significant innovations (Mohamed Abdel Sattar Al-Badri., 2016).

This industrial and scientific leap prompted legislators to enact various competition and labor laws, which in turn created and increased the demand for legal services and consultations. Many laws aimed at mitigating the impacts of the industrial revolution were issued in Britain, such as prohibiting the employment of children under nine years old and banning women from working in mines. Locally, however, Islamic law and tribal customs prevailed, and there was no notable development in the legal and educational handling of the First Industrial Revolution.

2.1.2 The Second Industrial Revolution

Approximately a century after the onset of the First Industrial Revolution, groundbreaking inventions such as electric motors and internal combustion engines emerged, marking a significant turning point in human history and signaling the beginning of the Second Industrial Revolution in the late 19th century. During this era, communication methods evolved with the use of the telephone, and electricity began to be used in homes, significantly improving human lives (Smith, supra note 1.). Cities developed, interconnected by vast water supply networks and sewage systems, and numerous medical innovations, such as antibiotics, medical imaging, X-rays, and radiology, emerged, enhancing public health. This revolution led to an unprecedented increase in production and an improved quality of life. The period also saw significant oil discoveries, prompting many countries and companies to drill wells to extract petroleum products.

With the early unification of the Kingdom of Saudi Arabia, oil was discovered, transforming the national economy into a prosperous and attractive destination for global capital. The state engaged in numerous legal negotiations with companies and entities competing for oil extraction rights. The discoveries of the Second Industrial Revolution were leveraged to explore and extract oil. However, there was a shortage of specialists in laws and international agreements, as the state was still in its early stages of development. Despite this, King Abdulaziz—may his soul rest in peace—and the people of the Arabian Peninsula possessed sufficient religious values, astuteness, and traditional legal customs, which are considered legitimate sources of law. The state issued numerous legal orders and decrees to address and keep pace with developments of that era. Several statutory laws, compatible with Islamic law, were adopted to regulate and organize contemporary issues. Examples of such regulations include the Fundamental Law of the Saudi National Automobile Company in the Kingdom of Hejaz and Najd, issued in 1927, the Hejaz and Najd Currency Law of 1927, and the Commercial Law of 1931, among others (Mohammed Abduljawad Mohammed., 1977). During this period, legal education was limited to the study of Sharia sciences, excluding statutory laws and international agreements.

2.1.3 The Third Industrial Revolution

There is no specific date marking the beginning of the Third Industrial Revolution, but it can be said to have started in the 1950s (B. L. Smith., 2001). This revolution is distinct from its predecessors in that it is a digital revolution characterized by the use of computers, computer-aided design, and microchips. The advancements that set this digital revolution apart from the first and second industrial revolutions were the simplification and simultaneous increase of production processes through the use of digital technology. This revolution witnessed the emergence of the internet, personal computers, and information technologies. As previously mentioned, industrial revolutions are interconnected; this revolution brought innovations such as renewable energy sources, aimed at preserving the environment and natural resources, which may have been depleted or degraded by the first and second revolutions. Solar energy and hydrogen emerged as significant innovations in renewable energy production during this revolution (Salwa Abdelbaki., & Hamdi Al-Hanawi., 2014). These advancements led to the creation of new laws focused on environmental conservation, energy sources, and their use and production, as well as laws addressing cybercrimes and other related issues. This, undoubtedly, necessitates aligning legal education with practical realities influenced by economic and industrial changes.

In line with this revolution, legal and educational developments in Saudi Arabia saw the issuance of numerous statutory regulations and the establishment of many specialized judicial committees in new fields. The state also became a member of various international agreements and global organizations. The Higher Committee for Educational Policy at the time recognized the need to graduate specialists in law and regulations, recommending that legal studies be taught in Sharia colleges. In 1981, the Council of Ministers issued a decision mandating the teaching of law in Sharia colleges (Ayoub bin Mansour Al-Jarbou., 2011).

2.1.4 The Fourth Industrial Revolution

While the First Industrial Revolution was characterized by the use of steam power, the second by electricity, and the third by computers and computing, the Fourth Industrial Revolution has brought about unprecedented changes unlike any of the previous three. This fourth revolution introduced technological advancements such as Artificial

Intelligence (AI), Machine Learning, Big Data, and other emerging technologies like biotechnology, smart robotics, nanotechnology, and Blockchain.

The Fourth Industrial Revolution began in Germany at the turn of the new millennium, through manufacturing and comprehensive automation in machinery and production processes (Watfa, supra note 3.). The concept of the Fourth Industrial Revolution was scientifically and fundamentally established by Klaus Schwab, the founder and executive chairman of the World Economic Forum. Schwab introduced "The Fourth Industrial Revolution" as the theme of the 46th World Economic Forum Annual Meeting held in Davos in 2016. Schwab believes that the Fourth Industrial Revolution emerged from the premises of the third revolution, underscoring the interconnection of industrial revolutions. The computing revolution started in the 1950s and evolved into artificial intelligence, social communication technologies, and biotechnology (Id.).

Schwab asserts that this revolution, with its rapid pace, broad scope, and profound impact, compels us to rethink how our countries develop and the strategies we must adopt to face its challenges and create new opportunities for economic development. Ultimately, this depends on countries' capabilities, technological infrastructure, ability to develop and employ educational systems, and enhance their workforce's skills to handle these advancements (Id.). These advanced developments necessitate that legal practitioners and legislators work on enacting laws and conducting legal studies that maximize the benefits of these technologies for society while mitigating their negative impacts (Ryan Calo., 2017; Margot E. Kaminski, & Jennifer M., 2021). These advanced technological developments and their implications for legal education will be explored in the second chapter.

2.2 Legal Education in the Kingdom of Saudi Arabia

To understand the history, beginnings, and ongoing challenges of legal education in the Kingdom, it is essential first to comprehend the Saudi legal system, as the legal system of any country significantly influences the structure of its legal education.

2.2.1 The Legal System in the Kingdom

The legal system of the Kingdom of Saudi Arabia is distinct from other legal systems worldwide in its foundation, type, and sources. The foundation of Saudi laws is represented by the Basic Law issued by Royal Decree No. A/90 in 1992, along with other fundamental laws (Shura Council Law, Council of Ministers Law, Law of Provinces, and Succession Commission Law). These laws derive their strength from their constitution, which is the Islamic Sharia, as Article 1 of the Basic Law stipulates that the Kingdom's constitution is the Holy Quran and the Sunnah of the Prophet Muhammad (peace be upon him). This is a general principle stated in the Basic Law, implying that any new law issued in the state must not contradict the Quran and the Sunnah, which are considered the Kingdom's constitution and supreme law.

It is well-established that the legislative authority is responsible for enacting laws (legislation), and the Basic Law in Saudi Arabia emphasizes this role and adherence to Islamic Sharia in its exercise. Article 67 states, "The legislative authority shall have the power to enact laws and regulations to serve public interest and protect the integrity of State affairs in accordance with the principles of Sharia. It shall exercise its powers in accordance with this Law, the Law of the Council of Ministers, and the Shura Council Law." Examining the laws in force, we see a commitment to these general principles. For instance, Article 4 of the Labor Law issued by Royal Decree No. M/51 in 2005 states, "When implementing the provisions of this Law, employers and workers shall adhere to the provisions of Sharia."

In addition to the Islamic Sharia and the fundamental laws of the state as the foundation of laws and regulations, the Kingdom's commitments under international agreements and treaties—considering its reservations on some provisions—also constitute a basis for the Saudi legal system. For example, the Saudi Arbitration Law issued by Royal Decree No. M/34 in 2012 states in Article 2, "Without prejudice to the provisions of Sharia and international conventions to which the Kingdom is party, the provisions of this Law shall apply to any arbitration regardless of the nature of the legal relationship subject of the dispute, if this arbitration takes place in the Kingdom or is an international commercial arbitration taking place abroad and the parties thereof agree that the arbitration shall be subject to the provisions of this Law."

Regarding the type of legal system in the Kingdom, it is a comprehensive system combining divine law and human law. For instance, criminal law in terms of penalties and criminal procedures in the Kingdom is based on divine law as well as statutory provisions enacted in compatibility with Islamic Sharia. Thus, penalties for certain crimes are defined by Islamic Sharia (divine law), known as Hudud, while the procedures for apprehending suspects, investigating, and prosecuting them are statutory laws (human law) developed according to international standards without contradicting Islamic Sharia. Notably, the Saudi legislator's approach is to codify Sharia rulings into written

laws issued by the legislative authority. For example, Personal Status Law (Family Law) issued by Royal Decree No. M/73 in 2022 includes provisions on marriage, guardianship, custody, and inheritance, all derived from Islamic Sharia sources to resolve jurisprudential disputes in interpreting these rulings. Nevertheless, the legislator affirmed the supremacy and dominance of Islamic Sharia as a fundamental source, as stated - in Article 251 of Saudi Family Law: "Absent a specific provision in this Law, the provisions of Sharia that are most consistent with this Law shall apply."

From the above, it is clear that the Saudi legal system is distinctive as it integrates divine and human laws, with the latter required to align with the former, being the supreme constitution and law of the state. As previously mentioned, the legal system of a country is the primary influencer of its legal education, which will be discussed in the following section.

2.2.2 Legal Education in the Kingdom

As discussed in the previous section, the legal system of the Kingdom derives its strength and rulings from Islamic Sharia and the country's fundamental laws. Additionally, the Kingdom has enacted several statutory laws that do not conflict with Islamic Sharia, and it is also a member of numerous international agreements. As a result of this mixed legal system—combining divine laws and statutory laws—two independent schools of legal education have emerged in Saudi Arabia: Sharia Colleges and Law (or Legal Systems) Colleges.

The legal education rooted in Sharia law developed within Sharia Colleges, while the other branch of legal education, which deals with modern and emerging laws, regulations, and systems, found its foundation in the Institute of Public Administration. Legal education and training were established at the institute in response to the needs of that era and the demands of government officials and academics who recognized the arrival of a modern age and the urgent need for specialized legal training in the Kingdom (Awwad Ali Alanzi., 2020). Alanzi also mentions that the Institute of Public Administration introduced the first postgraduate program for legal sciences in the Kingdom. The institute's mission was to educate and enhance the efficiency of government employees, and it spearheaded the introduction of legal education in the Kingdom, despite the objections of some societal groups who protested against the program in various forms.

Legal education was introduced in the Kingdom in the early 1970s through the Institute of Public Administration, although the institute did not grant academic degrees but rather offered a legal diploma to educate students and qualify them to work as members of quasi-judicial committees or as legal advisors for government entities (Id.). In the early 1980s, King Saud University began filling the gap in legal education in the Kingdom by establishing a Department of Law within the College of Administrative Sciences, which has since evolved into the College of Law and Political Science (M.H. Salameh, & J.A. Fotouh., 2017). Following this, law colleges were established at various public and private universities in Saudi Arabia, with more than 30 colleges now existing across different universities.

It is important to note that legal education in the Kingdom is not exclusive to law, legal systems, or rights colleges; rather, Sharia colleges are considered the foundation of legal education, as their existence predates that of legal systems colleges due to the fact that the legal system of the state derives its strength and rulings from Islamic Sharia. Therefore, it can be said that legal education encompasses both Sharia and legal systems colleges, especially since graduates from both enjoy the same professional opportunities, whether in practicing law or pursuing other legal professions. The only distinction is that graduates of Sharia colleges have the exclusive right to become judges, whether in general courts or administrative courts.

The fragmentation in legal education in the Kingdom results in graduates who receive incomplete and non-comprehensive education. Legal education should encompass statutory laws, comparative law, and the provisions and sources of Islamic Sharia. This necessitates a restructuring of legal education to address this issue, as well as to develop the current curricula of these institutions to keep pace with technological advancements and the requirements of the Fourth Industrial Revolution.

3. The Advancements of the Fourth Industrial Revolution and the Developments of Legal Education

The term "industrial revolution" broadly describes rapid technological advancements that bring significant impacts on society (Smith, supra note 1.). Smith notes that while scholars and historians may disagree on the specific characteristics and indicators that mark the beginning of a Fourth Industrial Revolution, the more crucial point is that technology is evolving at an extraordinary pace. This technological progression has a substantial impact on law, legal education, and the skills required by law students.

3.1 Advancements of the Fourth Industrial Revolution

What distinguishes the Fourth Industrial Revolution from previous revolutions is the remarkable speed at which its technologies are evolving, the complexity brought about by these developments, and the comprehensiveness they offer by impacting various aspects of life (Watfa, supra note 3.). This section will review the most significant technologies introduced by the Fourth Industrial Revolution.

3.1.1 Artificial Intelligence (AI)

The concept of artificial intelligence emerged in the 1950s when the scientist Alan Turing tested whether machines were capable of thinking. Despite this, there is no universally agreed-upon definition of artificial intelligence, much like other scientific terms that researchers and scholars' debate. Most definitions focus on the ability of machines to act intelligently, similar to humans. According to the Saudi Data and Artificial Intelligence Authority (SDAIA), AI is defined as "systems that use technologies capable of gathering data and utilizing it to predict, recommend, or make decisions with varying levels of autonomy, choosing the best action to achieve specific objectives."

Several notable examples of AI's development have emerged. In the 1990s, for instance, the "Deep Blue" chess program was developed and successfully defeated world chess champion Garry Kasparov at that time. This is an example of narrow AI, whereas developments in AI point to broader and more advanced forms, such as superintelligent AI.

Due to the continuous and rapid advancement of artificial intelligence, several technologies have emerged from it, such as machine learning, natural language processing, computer vision, speech processing, and robotics, which are among the most critical technologies that have evolved throughout the recent industrial revolutions.

3.1.2 Internet of Things (IoT)

The Internet of Things (IoT) refers to the "interconnection of multiple objects through systems and sensors controlled via the Internet, allowing these objects to interact with each other and with humans, which has led to the emergence of numerous applications across various fields" (J. Holler, V. Tsiatsis, C. Mulligan, S. Avesand, S. Karnouskos, & D. Boyle., 2014).

The use of IoT has penetrated many service and industrial sectors, leading to a noticeable expansion of this technology in recent years (Mashael Al-Siʾariyah, Wajeeha Al-ʾAniyah, Khalaf Al-ʾAbri, Abdullah Al-Shanfari, & Hafithah Al-Barashidiyah., 2021). It is important to highlight the comprehensive nature of the term "things" in IoT, as it encompasses everything intended to be connected to the Internet. These things could be a person, a car, a ship, or any other object equipped with a device capable of connecting to the Internet (Amina Rashid Al-Rasbiya., 2021).

As this technology continues to evolve, objects are becoming increasingly autonomous, functioning without human intervention, or requiring minimal human interaction. The connected objects operate independently, even fixing their own issues without human involvement, as seen in self-driving cars (Id.). Examples of IoT systems include smart cities, where governments utilize IoT applications to measure air quality, radiation levels, implement smart lighting systems, and detect the need for infrastructure maintenance, such as roads and pipelines (What is the Internet of Things (IoT)? Explanation of the Internet of Things," AWS, https://aws.amazon.com/ar/what-is/iot (last visited Sept. 20, 2024).).

3.1.3 Machine Learning

As previously mentioned, machine learning is considered one of the most important applications of artificial intelligence, especially deep learning techniques due to their demonstrated high capabilities in data processing, understanding patterns and relationships, and their accuracy in drawing conclusions and making decisions in specific tasks. Machine learning techniques have also contributed to a qualitative leap in data analysis capabilities. These techniques can be applied in various fields depending on the needs and potential of these technologies ("Artificial Intelligence," Saudi Data & AI Authority, https://sdaia.gov.sa/ar/SDAIA/about/Pages/AboutAI.aspx (last visited Sept. 20, 2024).).

Machine learning refers to the "science of developing algorithms and statistical models that computer systems use to perform tasks without explicit instructions, relying instead on patterns and inference. Machine learning algorithms allow computer systems to process large amounts of past data and recognize data patterns, enabling them to predict outcomes more accurately from a given input dataset. For example, data scientists can train a medical application to diagnose cancer from X-ray images by storing millions of examined images and their corresponding diagnoses" (AWS, supra note 32.).

3.1.4 Robotics

Robots were created to replace humans and were designed to perform dangerous tasks, such as mine detection or exploring environments that are uninhabitable for humans, like outer space. Robots are also frequently used in the educational process, particularly in teaching science, mathematics, and engineering. Despite expectations that robots will replace humans in many jobs and tasks, they still require human supervision, as humans are the ones who program them and monitor their performance.

In general, robots are considered any physical technological system that performs specific tasks and functions, saving time, money, and effort. For instance, car companies use numerous robots in their factories to assemble and install car parts. Robots have evolved to possess computer vision, becoming independent and flexible in executing assigned tasks based on the analysis of the images received by embedded computing devices. Notably, robots are connected with other Fourth Industrial Revolution technologies, such as Big Data and the Internet of Things (IoT). The integration of these technologies with robotics results in more intelligent and complex robots capable of operating in most aspects of life, including law and how it is taught to future generations (Al-Rasbiya, supra note 30.).

3.1.5 Big Data

Big Data is defined as "the massive amounts of data and information generated by the development of communication and the internet, and the ability to store and analyze it" (Al-Si'ariyah et al., supra note 29.). Big Data has gained significant importance in both private and public entities, where it is collected and analyzed to improve services and products and enhance related economies (Id.).

Since the emergence of the Big Data concept in 2005, its uses have increased, and its value has grown due to its effectiveness. Global revenues from Big Data investments were estimated at 49 billion dollars according to a report by Statista, and the global Big Data market is expected to grow to 103 billion dollars by 2027 (Bilal Al-Hefnawi., 2023).

3.1.6 Blockchain

Blockchain technology has been defined in several different ways, but there appears to be no universally agreed-upon definition yet. Some describe it as "a global, distributed, immutable 'Google Spreadsheet' that will accelerate in the near future, supported by blockchain technology and smart contracts" (Mark Fenwick, Wulf A. Kaal, & Erik P.M., 2017). It is described as a distributed database capable of managing a continuously growing list of records called blocks, with each block having a timestamp and a link to the previous block. These sequentially designed blocks ensure that the data entered cannot be altered after being stored (Al-Rasbiya, supra note 30.). These digital blocks have databases that record transactions, distribute them, and store them in a network of computers worldwide under supervision, making it difficult to tamper with or alter them. This grants them credibility and security in dealings, and they are considered one of the innovations that will change trade, money transfers, and banking operations (Al-Si'ariyah et al., supra note 29.).

These technologies, along with others such as 3D printing, cloud computing, nanotechnology, bioprinting, and other emerging technologies, have had a direct impact on society, businesses, and all aspects of life. This impact is expected to increase with the continuous innovations in either the development of these technologies or the invention of new ones. One of the most significant areas affected by these technologies is the labor market, as they often provide means of production that are less costly and less dependent on human labor. Consequently, this may lead to immense wealth for investors in these technologies, while many workers could lose their jobs as these technologies replace them in various sectors, potentially resulting in violent labor uprisings. For instance, during the First Industrial Revolution, when weaving machines replaced workers in textile factories, a group known as the "Luddites" emerged, engaging in violent actions that included smashing these machines, which represented one of the major developments of the First Industrial Revolution (Smith, supra note 1, at 348.).

Therefore, educational institutions must consider the needs of the labor market and prepare graduates to meet these demands. If a generation is trained with curricula designed during the eras of the First or Second Industrial Revolutions, it will become a burden on the labor market in this new era, which is brimming with cutting-edge technologies. In the following section, the research will discuss important aspects of restructuring legal education to align with the requirements of the Fourth Industrial Revolution.

3.2 Development of Legal Education

As mentioned in the previous section, industrial revolutions typically have a significant impact on labor markets. Additionally, industrial revolutions greatly influence the legal field in all its aspects, whether in terms of what should

be taught or what laws should be enacted to align with each stage. Therefore, law schools are expected to begin reorienting and developing their curricula to keep pace with these changes. Moreover, relevant authorities must address the duality in legal education in the Kingdom, which needs reconsideration to unify the teaching methodology and the academic degrees granted to law students across the Kingdom. While this issue is not the focus of this research, it is worth noting that it must be addressed, especially since it has persisted for decades. Nevertheless, this fragmentation in legal education in the Kingdom does not preclude efforts to restructure legal education, whether in law and legal studies faculties or Shariah faculties, to meet the demands and needs of the Fourth Industrial Revolution.

The benefits of developing legal education span several areas. Primarily, society needs lawyers and legal professionals who can provide diverse legal services at reasonable costs, with high speed and quality. Additionally, entrepreneurs and startups have a significant need for legal experts knowledgeable in innovation and intellectual property matters. From a legislative perspective, governments require legal professionals capable of assisting in the drafting and formulation of laws and regulations concerning modern technologies and the associated side effects, such as artificial intelligence and its ethical implications. This section addresses several aspects aimed at developing legal education to ensure the graduation of competent legal professionals well-prepared for the changing labor market.

3.2.1 Developing Digital Literacy Among Law Students

Digital literacy refers to the ability to use modern technologies in learning and academic achievement. In today's modern societies, digital literacy has become essential for individuals to carry out their activities and roles naturally. In previous industrial revolutions, the focus was on language proficiency, computer skills, and some developments specific to those eras. However, in this recent technological revolution, additional learning requirements have emerged, such as the need to be familiar with technology and its diverse applications. Law schools must incorporate these technologies into their curricula or ensure that there is no digital illiteracy among prospective or current law students. Digital literacy can be acquired through students' personal initiative or through faculty members using educational support tools such as Blackboard, Zoom, and other applications or even social media. However, digital literacy for students should not be limited to merely using these technologies; it must extend to include digital reading and writing skills, their theories, and practical education to enable students to solve digital problems (Thanaraj, supra note 2.).

One practical application to solidify digital literacy was carried out by the Vice Dean of the Nottingham School of Law, who used Twitter as a platform to respond to student feedback when reviewing course material (Mathew J. Homewood., 2023). This project consisted of several review sessions on Twitter, each lasting 30 minutes, using the hashtag #eulawrocks, which referred to the course being reviewed with the students and responded to their queries during that period. Several benefits resulted from this experiment, such as the ability to address many students due to the open nature of technology, the capacity to revisit previous responses and queries at any time as they are not lost, and the fact that this platform is free, allowing both current and future students to participate and access the material. Homewood notes that the research conducted provides a useful example of how technology can facilitate student learning. However, it is essential to recognize that the technology—in this case, Twitter (Called X now)—is not what delivers the learning gains. Instead, technology serves as the mechanism through which established learning methods are facilitated. In this way, X is nothing more than a tool used alongside "traditional" technology (such as whiteboards) in the toolbox available to educators to enable student learning. Understanding how this facilitation occurs provides valuable insight into choosing the right tool. As new tools emerge, educators must remain open to the opportunities they offer while also considering their limitations.

Looking at digital experiences in legal education in Saudi Arabia, there are many successful experiences, although they are not at the level expected from law schools in the Kingdom. Many personal initiatives and voluntary projects by law students focus on creating and sharing digital legal content, but these efforts need support and adoption by legal education institutions. One example of a digital legal education initiative is the Twitter account "Jurm" (@LAWJURM), which aims to enhance criminal law education by organizing legal meetings that bring together experts and law students in online seminars and meetings. According to this platform, 74 meetings have been held within two years of its establishment, benefiting 33,218 viewers of the visual content and approximately 321,000 readers of the written content.

Another successful and enriching initiative in Saudi Arabia is the "Ethrai" digital platform by the Institute of Public Administration, which offers numerous training programs and courses in various fields, including law (See Ethrai, https://ethrai.sa (last visited Sept. 20, 2024).). The platform provides several pre-recorded legal programs containing

diagrams, images, and designs that help learners fully understand the content, allowing trainees to learn anytime and anywhere with high quality and effectiveness. For example, the number of beneficiaries of one of the legal programs on the platform ("Cybercrime Program") reached 129,965. The platform also offers online conferences that gather experts and allow the participation of the largest possible number of beneficiaries. For instance, the number of registrants in the electronic conference on "Administrative Judiciary and its Laws in the Kingdom" reached 11,887 participants.

Another successful initiative is the "Qadha" Association, overseen by Imam Muhammad bin Saud University, which produces digital versions of laws and regulations in the Kingdom and links them in digital publications to make them easier to understand, keep updated, and facilitate navigation between legal materials (See Qadha, https://qadha.org.sa/ar (last visited Sept. 20, 2024).). The association also offers many specialized courses and programs in specific areas of law, training practitioners in particular legal fields.

These platforms are characterized by their ability to provide legal education without temporal or spatial constraints while offering innovative and distinguished training. Such initiatives can be beneficial to law schools, but there needs to be a redesign of law school curricula to include digital literacy skills and familiarity with digital tools.

3.2.2 Restructuring Law Education Curricula

Curriculum reform is one of the most sensitive reforms in educational policy, and it often comes with high risks, as resistance to change tends to be much stronger than the desire for it (2020). The OECD report notes that curricula are often regarded as "everyone's business," with many differing opinions on what students should learn. There is various interest groups involved in curriculum reform, not just students and faculty who directly engage with the process. In legal education, perspectives on reform vary: academic experts hold views on what students should learn at a certain age, universities have expectations of what students should be able to do after graduation, and employers have their own expectations of the task's graduates should be able to perform upon entering the workforce (Id.).

In examining the curricula of law faculties in Saudi Arabia, most of them still adopt traditional approaches, focusing on law independently from other sciences, with basic courses in statistics, management, economics, and politics. Looking at the curriculum for the Higher Diploma in Legal Studies at the Institute of Public Administration—one of the most recent legal education programs in the Kingdom—it does not differ much from curricula designed to meet the needs of pre-Fourth Industrial Revolution labor markets. However, this program which is a U.S. J.D.-style program is notable for its specialized tracks, allowing students to graduate with expertise in a specific field of law. This specialization is something that law faculties in the Kingdom should adopt, either through one of two approaches. First, a study plan that includes as many legal subjects as possible, allowing students to choose their preferred courses, with the first year consisting of mandatory foundational courses such as legal principles, contracts, procedures, professional responsibility, and other core legal subjects. Alternatively, the second approach is to follow the model of the Institute of Public Administration's diploma program but expand the tracks to meet labor market needs for specific legal specializations, such as intellectual property law, health law, digital law, and environmental law.

It is important to consider the impact of the Fourth Industrial Revolution on education, as the integration of technologies has narrowed the gaps between physical and digital realms. The democratization of technology has created exceptional levels of innovation and efficiency, driving unprecedented flows of digital information (P. S. Amirnuddin, A. A. Mohamed, & M. H. Ahmed., 2020). In light of this, it may be time to consider new innovations in the structuring of law education programs and curricula. Law schools should move away from traditional models of legal education and replace them with high-efficiency, cost-effective, and accessible programs (Id.).

Upon reviewing the curriculum requirements in law faculties, there are no mandatory requirements for practical training during the study period, except for the final year, where students intern at a government entity or private sector, including law firms. However, students should be required to intern at law firms throughout their studies to practice in the specialized fields they wish to focus on. While regulatory issues may arise concerning providing legal consultations and representation by interns, this should not prevent students from training under the supervision of attorneys for practical, hands-on learning.

One global practice with mutual benefits for the legal profession and society is legal aid or legal clinics. In reviewing law schools in Saudi Arabia, there are currently only two known legal clinics, one at Princess Nourah University and another at Prince Sultan University. This calls for reconsideration of law school curricula and the inclusion of courses on legal clinic training starting in the second year of study. Students should be required to complete volunteer hours in legal clinics, where they can train in legal practice, foster a spirit of initiative and cooperation, and contribute to

providing legal services to those who cannot afford attorney fees. The Saudi Bar Association has played a significant role in encouraging law schools to adopt this educational approach by establishing regulations that govern the creation of legal clinics in legal education institutions. Article 3 of this regulation states that legal clinics aim to train students in providing legal services, develop legal and judicial skills, elevate the quality of law and Sharia graduates, and foster effective communication between them and the community (See Saudi Bar Association, https://sba.gov.sa/legal-clinics/ (last visited Sept. 20, 2024).). The regulations also state that legal clinics aim to train students in the academic content offered by law and Sharia schools, combining theoretical concepts with the practical realities of legal practice. One of the main goals of legal clinics is to instill a strong sense of professional responsibility and ethics in legal professionals, alongside other objectives such as promoting self-learning, enhancing graduate quality, and increasing the competitiveness of graduates in the labor market (Id.).

3.2.3 Adopting Interdisciplinary Education

The world is currently facing significant challenges that cannot be addressed by a single discipline in isolation from others. In light of this, the field of law should be reimagined by integrating it with other disciplines, so that modern specializations such as Law-Tech can be taught (Anne Thanaraj., 2023). New options and innovative forms of law degrees might emerge in the future, such as legal engineering or law and artificial intelligence, alongside a focus on interdisciplinary studies and the development of necessary skills and competencies (Kim Silver., 2023).

Upon examining legal education in Saudi Arabia, a clear division and duplication are evident. Legal education in the Kingdom is split into two branches: (Sharia Colleges) and (Colleges of Huquq (Rights), or Law) (Al-Jarbou, supra note 18.). Each of these branches differs fundamentally in the curricula and subjects taught. Sharia Colleges primarily focus on teaching jurisprudence and its principles, the Quran and its interpretation, Hadith studies, the Arabic language, sources of Islamic rulings, and worship and transactions. On the other hand, Colleges of Law primarily focus on teaching laws such as administrative, constitutional, criminal, and labor laws, among other civil regulations (Id.). Therefore, there is a pressing need to address this longstanding division and unify legal education institutions so they encompass both Sharia and legal sciences. This is crucial given the diversity of legal sources and the religious and historical foundations of the Saudi legal system. As previously mentioned in this research, this division does not preclude the development and restructuring of legal education curricula to align with the requirements of the technological revolution, allowing them to be taught alongside modern technological specializations.

Upon reviewing the curricula of some law schools in Saudi Arabia, there are no courses related to legal technology. This calls for reconsideration in introducing such courses that prepare students for the future, rather than focusing on past laws. Given the current reality of the legal profession, digital transformation has become prevalent in many aspects of legal practice. For instance, a report by the Ministry of Justice (The Judicial Sector in 7 Years of Vision 2016-2023) states that 95% of judicial sessions are held remotely through the e-litigation service (Ministry of Justice., 2023). Parties to the case or their lawyers can utilize judicial services during litigation electronically, such as submitting the first defense memorandum, all through the digital portal (Najiz), which allows lawyers to litigate and appeal digitally. The report highlights that these digital advancements have reduced the duration of cases by 79%, resulting in 2.6 million judicial rulings being issued through e-litigation between 2016 and 2023. In the enforcement sector, the Ministry of Justice launched a virtual enforcement court in 2022 that processes enforcement in just two steps without any human intervention.

These developments in the judiciary and legal practice are only the beginning. However, the educational aspect has not kept pace with these changes. Therefore, legal education institutions in Saudi Arabia need to reconsider their curricula and specializations to prepare law students for the technological future that is emerging in recent years. To equip law students for the future, they must be provided with a wide range of philosophical and knowledge-based values across different sciences, especially in light of the changing landscape and the emergence of new jobs that require a diverse and hybrid set of skills. Thanaraj also found that learning through combining various disciplines into the core field fosters integrative learning and enhances legal knowledge in other areas. To harness this opportunity effectively, there needs to be a shift beyond linear thinking and the structuring of disciplines, with an introduction to law and technology as an academic foundation that benefits both legal specialization and professional identity (Thanaraj, supra note 2, at 218-19.).

The interdisciplinary curriculum, based on multidimensional knowledge in law and technology, not only equips students with digital knowledge for future jobs but also provides them with interdisciplinary expertise that enables them to lead discussions around legislation in the digital age (Thanaraj, supra note 53.). This includes using both

existing and emerging laws and legal knowledge to shape the digital transformation of social, economic, and ethical structures, which are being reimagined in light of the Fourth Industrial Revolution (Id.).

Among the models proposed by Thanaraj in his study is a course on Corporate Social Responsibility and Professional Responsibility in Digital Transformation (Id. at 191.). This is due to the increasingly complex and volatile business environment, which requires the development of entrepreneurial, innovative, and creative thinking to allow such an environment to adapt and respond to digital transformation. In this course, students will gain a deep understanding of how digital transformation affects legal services and how the digital age is changing the ways legal services are provided. They will analyze the disruption of the legal services market, study new delivery channels, and evaluate the automation of legal services. The study also mentions that students who study such a course will critically reflect on the principle of professional responsibility when algorithms are empowered to make predictions and decisions. Students will critically assess what it means for professionals to work responsibly with big data and algorithms (Id.). Other interdisciplinary courses suggested by Thanaraj that meet the requirements of this phase and prepare students for future jobs include: Digital Property and Real Estate Law, Legal Skills and Computational Design Thinking, Digital Ethics and Cybersecurity in the Internet of Things, Digital Transformation in Industries and Professions (Patents and Healthcare Technologies), Legal Values in Technological Innovations, the Legal Profession in the Digital Age (Id.).

Legal education institutions in the Kingdom still adhere to traditional legal education, and they must reconsider restructuring their curricula to align with the stage and meet the requirements of the Fourth Industrial Revolution, preparing Saudi law students for the digital future that has become dominant in the professional landscape. The adoption of specialized technology courses and their integration with some legal courses will play a role in increasing legal innovations among law students, thus developing legal services using modern technologies and innovations, benefiting society, upholding justice, and advancing legal professions.

3.2.4 Training for Future Skills

In the midst of the Fourth Industrial Revolution, numerous economic, social, and environmental changes are occurring at a rapid pace, and technologies are evolving at an unprecedented rate. However, education systems are relatively slow to adapt to these changes (OECD, supra note 47.). The demand for skills in the labor market has shifted significantly over the past few decades, where manual and routine cognitive tasks once dominated, but today's jobs require analytical and non-routine personal skills. Therefore, the burden falls on legal education institutions in Saudi Arabia to develop future skills in students, enabling them to meet the demands of the labor market and fulfill the legal service needs of society and businesses.

Alongside technological advancements, globalization has opened borders for businesses, and increasing financial pressures demand the evolution of law and legal education in the coming years (Smith, supra note 1.). While technological advancements permeate all aspects of business, including legal services where many tasks are automated, some skills are less susceptible to digital transformation, such as creative problem-solving skills. Hence, legal education institutions in Saudi Arabia must focus on developing these skills in law students, either through specialized training programs or by embedding them within the curriculum as essential competencies to be learned alongside legal subjects. Below are some of the critical competencies that should be developed to prepare students for the future of the legal profession.

(1) Problem-Solving Skills

One of the key attributes of a successful lawyer is the ability to solve problems efficiently, making this skill integral to the legal profession. Law schools should foster this skill by teaching students' creative ways to analyze and diagnose problems and devise suitable solutions. Additionally, problem-solving training provides students with experience in preventing future issues or mitigating potential challenges through continuous learning and foresight. Entrepreneurs, society, and governments rely on legal professionals to resolve problems, so the onus is on law schools to produce problem-solvers, not problem-creators.

(2) Alternative Dispute Resolution

When problems escalate into disputes, legal practitioners must be equipped to resolve conflicts if they fail to solve the original problem. Various alternative dispute resolution (ADR) methods, such as negotiation, mediation, conciliation, and arbitration, have emerged. Hence, law schools must prepare their graduates with negotiation skills and other ADR methods, as these are now preferred by entrepreneurs and businesses over formal litigation. It is suggested that students be trained in ADR through realistic simulations or by utilizing modern technologies like virtual reality.

(3) Adaptability to Change

As discussed at the beginning of this research, the rapid, comprehensive, and complex changes brought about by industrial revolutions require lawyers to adapt to these shifts, meeting the current needs with methods appropriate for each phase. Law schools should train students to adapt to the fast-paced changes of the Fourth Industrial Revolution. Even experienced legal professionals need to learn and train on modern technologies to stay relevant, or their services will be less in demand as new technologies and skills emerge.

(4) Entrepreneurship, Innovation, and Creativity

Legal professions, especially law firms, are no longer independent endeavors but are increasingly becoming professional entities akin to businesses. Law firms must now handle aspects such as business management, human resources, accounting, finance, and partnerships. Innovation is a crucial skill that enhances the quality and delivery of legal services to clients, through modern approaches that incorporate legal technology and artificial intelligence. Embracing such innovations leads law firms towards entrepreneurship, which can be fostered by recruiting graduates with creative and innovative traits. The responsibility initially falls on educational institutions, which should encourage students to innovate and be creative in legal solutions by supporting relevant interdisciplinary research and studies.

(5) Interdisciplinary Knowledge

Law intersects with and regulates various other sciences and contributes to resolving disputes that arise from them. Therefore, it is preferable for law students to be provided with resources from other disciplines or to be offered dual-degree programs, allowing them to study another subject alongside law. For instance, Columbia Law School offers several dual degrees, such as law and urban planning, public health, or theater management and production. Saudi universities should collaborate to foster such dual learning, resulting in specialized legal services that advance entrepreneurship and serve society.

(6) Project Management

It is crucial to train students in legal project management, risk management, and the analysis of legal projects. Legal professionals providing consultation are essentially managing a project, thus they must be capable of overseeing, analyzing, and distributing tasks, while also managing risks that may arise, whether from new legislation or disputes related to the project. The fast-paced nature of business in the Fourth Industrial Revolution requires that law students be equipped with project management skills to keep pace with the rapid developments in the field.

(7) Emotional Intelligence

Emotional intelligence is the ability to express emotions and handle personal relationships with wisdom and empathy. Law schools or training centers should prepare students to express their emotions wisely, as this human skill enables future lawyers to build and maintain strong relationships with their clients. Empathy, active listening, honesty, and a thorough understanding of clients' emotions and needs enhance the lawyer's role and distinguish them from artificial legal services.

(8) Effective Communication Skills

Communication is crucial in any business environment, especially when it comes to leadership skills for law students and lawyers. In a law firm, leaders must maintain relationships and open communication with attorneys, legal support staff, clients, and stakeholders. Students must learn to listen effectively to clients, stakeholders, and partners, and use clear vocabulary and appropriate language for each group. For example, overly technical legal terminology may be confusing to clients, so matters should be simplified and communicated clearly and effectively. Students should be trained in appropriate communication methods and the use of modern technological tools to maintain effective communication with clients and stakeholders. This skill may not be mastered by artificial intelligence or modern technologies, making the human element essential for comprehensive communication. Mastery of this skill can be achieved through learning and practice.

(9) Client Relations and Service

Understanding how to build and maintain strong professional relationships with clients is essential in any field of professional practice. Law students should be prepared and trained in relationship-building, as strong relationships with colleagues, clients, and stakeholders are key to a lawyer's success. Relationship-building and client service are skills that machines may not excel at, as they are innately human abilities that must be cultivated in students, as they may distinguish them from robots and other technological advancements.

(10) Digital and Technological Literacy

Digital transformation is pervasive across legal and judicial sectors, with court sessions now held remotely and legal pleadings filed electronically. In the future, there will be AI-designed judges and lawyers. It is crucial that legal education institutions in Saudi Arabia introduce programs on legal technology and technology law, while also equipping current law students with foundational knowledge of artificial intelligence and other modern technologies. Admission standards should include a basic level of digital literacy, meaning students should be proficient in computer use and relevant applications, and then be taught programming basics and technological innovation in law. This can be achieved by forming partnerships with technology and AI institutes to create dual educational pathways that produce graduates specialized in both law and modern technologies, meeting the needs of the job market.

4. Conclusion

This article has explored the industrial revolutions, with a focus on the Fourth Industrial Revolution and its impact on legal education, as well as the response of legal education institutions in Saudi Arabia to these developments. The study also referenced some international experiences that have adopted various modern technologies in legal education. By examining the current state of legal education in Saudi Arabia, it becomes evident that there is a division and fragmentation within educational institutions. Some colleges focus on Sharia studies with limited legal content, while others focus on legal sciences with minimal Sharia studies. As a result, graduates from these institutions lack comprehensive knowledge of the Saudi legal system, which is shaped by Islamic law, statutory regulations, international agreements, and other sources. Nevertheless, this clear issue does not prevent these institutions from reconsidering and restructuring their curricula to align with the rapid changes brought about by the Fourth Industrial Revolution. Legal education is the foundation for preparing future lawyers, and there is no doubt that these lawyers must be able to innovate, excel, and utilize modern technologies in providing high-quality legal services to society, businesses, and governments. This article concludes with several findings and recommendations as outlined below:

4.1 Findings

(1) Through the description and analysis of the Fourth Industrial Revolution, it is clear that it is penetrating all aspects of life with its remarkable developments, and more are still expected. Conversely, legal education institutions in Saudi Arabia have remained relatively stagnant in adapting to these changes and meeting the legal needs they have created. A review of most law school curricula reveals a lack of specialized courses or independent centers for teaching and researching Technology Law, which is one of the modern trends in legal education. This neglect reflects an unjustified indifference toward the advancements of the Fourth Industrial Revolution, which may lead to the future inadequacy of legal services in meeting the evolving needs of governments, businesses, and society as a whole.

(2) When examining the curricula of law schools in Saudi Arabia, they appear to be highly similar, with no law school standing out in any particular field of law. Students are required to study all core and specialized subjects together, without the option to pursue specific legal pathways. Moreover, students do not have the opportunity to specialize in a particular legal field, as they are required to complete all the courses in the approved curriculum without the freedom to select their preferred areas of focus.

(3) Law school rely on university training centers to provide courses that develop students' emotional, social, and analytical skills. However, this is dependent on students' willingness to engage in learning and training. Therefore, legal education institutions should integrate soft skills training into their curricula or establish mandatory courses for students to develop these essential skills. The importance of such skills lies in their relevance to core legal tasks such as litigation, settlements, and negotiations, and they are difficult for artificial intelligence to replicate in the near future, making them a key human advantage over machines.

(4) One of the chronic issues within the legal education system in Saudi Arabia is the duality of legal education, with separate Sharia and law colleges. The curricula of these colleges differ significantly, resulting in graduates who lack complete legal training. For example, Sharia graduates may be qualified to hold judicial positions, while graduates from law and legal studies colleges are not eligible to become judges. Yet, they perform similar roles in quasi-judicial committees and arbitration bodies. This contradiction is merely one of the consequences of the fragmented legal education system in the Kingdom.

(5) Legal education institutions in Saudi Arabia heavily rely on theoretical approaches in teaching, without a sufficient focus on the practical and professional aspects that are essential to legal practice and the legal profession. Although the Saudi Bar Association has issued regulations allowing legal education institutions to establish legal

clinics, the majority of these institutions have not yet implemented such clinics to provide students with practical experience during their studies. This undoubtedly limits students' skill sets, which in turn reduces their employability and ability to offer advanced legal services that meet the demands of the labor market.

4.2 Recommendations

4.2.1 Establish a National Project for the Development of Legal Education in Saudi Arabia

A national project should be initiated by relevant authorities in collaboration with universities, legal bodies, ministries, and prominent law firms. The goal of this project would be to restructure legal education institutions and review the curricula, programs, and specializations to align with the advancements of the Fourth Industrial Revolution and prepare for its demands.

4.2.2 Restructure Curricula to Include Modern Legal Topics

Curricula should be revised to incorporate courses addressing contemporary legal issues such as technology law, intellectual property, legal entrepreneurship, and data protection laws. Additionally, modern teaching techniques, such as design thinking, virtual reality, and augmented reality, should be integrated into legal education. To foster legal innovation, consideration should be given to introducing dual or interdisciplinary specializations that combine law with other fields, such as artificial intelligence or big data.

4.2.3 Encourage the Establishment of Legal Clinics

Legal education institutions should be encouraged to establish legal clinics and highlight their positive impact on developing essential legal skills, including communication, analysis, and legal practice. The Saudi Bar Association has played a positive role by approving the Legal Clinic Regulations, which organize their operation, establish procedures, and provide training frameworks. The next step is to urge legal education institutions to adopt and implement these initiatives. Moreover, prestigious law firms should contribute to societal development and student training by collaborating in the activation of legal clinics.

4.2.4 Equip Graduates with Future Labor Market Skills

Legal education institutions must ensure that their graduates are equipped with the skills required for the future labor market by incorporating necessary skills and competencies into their curricula. Partnerships with training institutions should also be established to facilitate students' acquisition of professional certifications and licenses through training and preparation programs. Additionally, legal education institutions should align their programs with the National Qualifications Framework and the academic standards set by the Education and Training Evaluation Commission. Leveraging the recommendations and solutions from the Human Capacity Development Program is also essential.

4.2.5 Engage Prestigious Law Firms in Curriculum Development

Prestigious law firms should be involved in the development of legal education curricula to enhance their practical and training aspects. The theoretical and practical approaches should be combined in the teaching process so that the student's journey through law school equips them with the knowledge and skills necessary for the legal labor market. This can be achieved through work in legal clinics managed by law firms or by involving experienced lawyers and legal experts in delivering some of the academic courses with a focus on practical and applied principles.

References

(2020). Curriculum (Re)Design: A Series of Thematic Reports from the OECD Education 2030 Project.

Ali Asaad Watfa. (2020). *The Future of Gulf Higher Education in Light of the Fourth Industrial Revolution: A Critical Reading of the Problem of Becoming and Destiny*, Gulf and Arabian Peninsula Studies Center, Kuwait University.

Amina Rashid Al-Rasbiya. (2021). Mechanisms for Developing Education and Learning in the Sultanate of Oman According to the Requirements of the Fourth Industrial Revolution, 45 Andalus J. Hum. & Soc. Sci. 311, 311-34.

Anne Thanaraj. (2023). *Legal Education as an Anchor Towards Shaping and Regulating the Digital World: Models of Law-Tech Curriculum, in Teaching Legal Education in the Digital Age: Pedagogical Practices to Digitally Empower Law Graduates*. https://doi.org/10.4324/9780429351082-17

Awwad Ali Alanzi. (2020). A Comparative Study on the Legal Education Model in Saudi Arabia, Int'l J. Higher Educ. https://doi.org/10.5430/ijhe.v9n2p70

Ayoub bin Mansour Al-Jarbou. (2011). An Evaluation of Legal Education in the Kingdom of Saudi Arabia, Paper Presented at the 1st World Conference on Teaching and Learning, Prince Sultan University.

Bilal Al-Hefnawi. (2023). Big Data – The Oil of the Future (1), LinkedIn, https://www.linkedin.com/articles.

B. L. Smith. (2001). The Third Industrial Revolution: Policymaking for the Internet, 3 Colum. *Sci. & Tech. L. Rev., 1*, 2. https://doi.org/10.1163/1875-8096_pplrdc_a9789041114891_03; Schwab, supra note 7.

F. A. Hayek. (1963). *Capitalism and the Historians*, Univ. of Chi. Press (1963) https://doi.org/10.7208/chicago/9780226321134.001.0001

Gavin Weightman. (2020). *The Industrial Revolutionaries: The Making of the Modern World 1776–1914*, Grove Press (paperback). https://doi.org/10.5860/CHOICE.47-0429

Hayek, supra note 5, Weightman, supra note 5, & R. Fremdling. (1996). *Industrial Revolution and Scientific and Technological Progress*, Research Memorandum GD-30, Univ. of Groningen. https://doi.org/10.1524/jbwg.1997.38.2.147

J. Holler, V. Tsiatsis, C. Mulligan, S. Avesand, S. Karnouskos, & D. Boyle. (2014). From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence, Elsevier. https://doi.org/10.1016/B978-0-12-407684-6.00001-2

Klaus Schwab. (2017). *The Fourth Industrial Revolution 6* (Crown Bus. 2017); Clark Nardinelli, Industrial Revolution and the Standard of Living, Econlib, https://www.econlib.org/library/Enc/IndustrialRevolutionandtheStandardofLiving.html.

Kim Silver. (2023). Legal Academics and the Fourth Industrial Revolution, in Teaching Legal Education in the Digital Age: Pedagogical Practices to Digitally Empower Law Graduates. https://doi.org/10.4324/9780429351082-16

Margot E. Kaminski, & Jennifer M. (2021). *Urban, The Right to Contest AI*, 121 Colum. L. Rev.

Mashael Al-Siʾariyah, Wajeeha Al-ʾAniyah, Khalaf Al-ʾAbri, Abdullah Al-Shanfari, & Hafithah Al-Barashidiyah. (2021). The Role of Fourth Industrial Revolution Technologies in Achieving Sustainable Development in Higher Education Institutions in the Sultanate of Oman, 13 *J. Arts & Soc. Sci., 79*, 79-94 (Sultan Qaboos Univ. 2021).

Mark Fenwick, Wulf A. Kaal, & Erik P.M. (2017). Vermeulen, Legal Education in the Blockchain Revolution, 20 *Vand. J. Ent. & Tech. L., 351*. https://doi.org/10.2139/ssrn.2939127

Mathew J. Homewood. (2023). Twitteryvision: Using Twitter Live Chat to Build Communities of Practice as a Legal Learning Tool, in *Teaching Legal Education in the Digital Age, 36*, 36-46 (Ann Thanaraj & Kris Gledhill eds. https://doi.org/10.4324/9780429351082-4

Ministry of Justice. (2023). Judicial Sector Report: Seven Years of Vision 2016 – 2023, available at https://www.moj.gov.sa/Documents/Sharing/Midd-JourneyStory.pdf.

M.H. Salameh, & J.A. Fotouh. (2017). *The Development of Legal Education in the Kingdom of Saudi Arabia*, Fiat Justisia. https://doi.org/10.25041/fiatjustisia.v11no3.973

Mohamed Abdel Sattar Al-Badri. (2016). From History: The First Industrial Revolution and the International Economy, Asharq Al-Awsat, https://aawsat.com/node/561586

Mohammed Abduljawad Mohammed. (1977). *The Legislative Development in the Kingdom of Saudi Arabia*, Cairo Univ. Press & Univ. Book.

P. P. Groumpos. (2021). A Critical Historical and Scientific Overview of All Industrial Revolutions, 54 *IFAC PapersOnLine, 464*, 464-71. https://doi.org/10.1016/j.ifacol.2021.10.492

P. S. Amirnuddin, A. A. Mohamed, & M. H. Ahmed. (2020). *Transforming Legal Education in the Era of Fourth Industrial Revolution* (IR4.0), Current L.J.

Ryan Calo. (2017). *Artificial Intelligence Policy: A Primer and Roadmap*, 51 U.C. Davis L. Rev. 399. https://doi.org/10.2139/ssrn.3015350

Schwab, supra note 7, & P. Deane. (1965). *The First Industrial Revolution* (1st ed. 1965).

Salwa Abdelbaki., & Hamdi Al-Hanawi. (2014). *Creativity, Higher Education, and the Challenges of the Third Industrial Revolution in Arab Countries*, 4th Arab Conference on Higher Education in Arab Universities: Prospects and Challenges, Cairo, Egypt.

Smith, Stephen R. (2023). *The Fourth Industrial Revolution and Legal Education, 39*. Ga. St. U. L. Rev. 337. Available at: https://readingroom.law.gsu.edu/gsulr/vol39/iss2/9

Thanaraj, Anne. (2023). L*aw Schools and the Fourth Industrial Revolution, in Teaching Legal Education in the Digital Age: Pedagogical Practices to Digitally Empower Law Graduates*. https://doi.org/10.4324/9780429351082-17

What is the Internet of Things (IoT)? Explanation of the Internet of Things, AWS, https://aws.amazon.com/ar/what-is/iot (last visited Sept. 20, 2024).

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