

**Transforming Education:
Integrating Artificial Intelligence into College Business Courses**

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Abstract

In an era marked by rapid technological advancements, the integration of artificial intelligence (AI) into various facets of business is already occurring. Higher education, especially business courses, must be at the forefront of this transformative wave. This paper explores the need for a paradigm shift in college business classes to include AI to cultivate a future-ready workforce.

The traditional landscape of business education is evolving to meet the demands of an increasingly digitalized and interconnected global economy. By incorporating AI tools into college business courses students will enhance their technological literacy and also be equipped with the essential skills needed for tomorrow's employment. This transformative approach goes beyond just theoretical knowledge by offering practical applications to prepare students for the complexity of the changing workforce.

College business programs must reimagine the business curriculum and foster interdisciplinary collaborations. Successful business professionals of the future must be able to leverage AI tools for effective data analysis, decision-making, and strategy formulation. Students must have critical thinking and problem-solving skills to meet the needs of the new digital age.

Incorporating AI tools into business courses is now a fundamental requirement for an effective business education. This paper explores the multifaceted implications of this transformation, emphasizing the need for educational institutions to embrace the power of AI and adapt so the next generation of business leaders has the skills necessary to navigate a complex AI-driven business world.

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An Introduction to Artificial Intelligence (AI)

The phrase “AI” is currently bantered about everywhere, but what this emerging technology means in terms of technical details and practical implications is unknown to most audiences. AI describes the emerging technology of artificial intelligence—meaning the development of intelligent machines that are capable of completing tasks and projects that would ordinarily require human intelligence (Arnold, 2023). At its core, artificial intelligence is a field of computer science, engineering, and data science that enables problem solving by utilizing specially trained information systems consisting of AI algorithms to make predictions based on data that is provided to the system (IBM, 2024). These systems are supported by the sub-fields of AI, machine learning and deep learning, to develop AI algorithms appropriate to the end user and application (IBM, 2024).

However, AI is not a new field of computer science or the emerging technology space. The term was coined in 1956 at a Dartmouth Conference where researchers were exploring how machines could think like humans (Darmouth College, 2024). Since then, AI has moved at an astonishing pace—both in terms of technological capabilities and market capitalization. According to the U.S. Commercial Service, more than \$66.8 billion was invested in global AI efforts and a record 61 AI technology firms were valued at over \$1 billion in 2021 alone (Alvarez & Ge, 2021). Furthermore, retail and banking industries spent more than \$5 billion per sector on AI technologies, which has only increased in recent years (Pazzanese, 2020). IDC, a global market intelligence firm, described the significant investments in AI that are expected within other sectors, such as the media industry and federal/state governments, and described AI as

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being “the disrupting influence changing entire industries over the next decade” (Pazzanese, 2020).

Consequently, the use of AI has already profoundly impacted the business and consumer world. Artificial intelligence is impacting consumer technology devices, the automobiles driven every day, the accuracy of medical diagnoses, financial decision making, and many other areas of the global business environment and lives of consumers (Arnold, 2023).

Business Use of AI

The use of AI by corporations and businesses is not something to think about for the future, it is already being implemented within these firms and playing an important role in business processes. Businesses are currently using AI technology to better support customer service functions not only by automating simple tasks (e.g., chatbots), but also by making communication seamless and faster for the customer. Furthermore, businesses are using AI for significant data analytics and providing insights on that data to better improve corporate strategy and sales. In an increasingly competitive global market, the data analytic capabilities offered by artificial intelligence and its sub-fields (e.g., machine learning and deep learning) makes a business much more efficient, responsive to customers, and competitive in the changing market.

The ability of AI tools to analyze data also improves the marketing function for businesses to better personalize and target the consumer buying experience. Currently, AI tools are being used to personalize the shopping experience of consumers and to make better informed recommendations, all to advance the customer experience in digital and physical environments. As part of these marketing function improvements, AI applications have also been implemented to improve and automate communication mechanisms that can develop to consumer needs and environments. This ability to improve the communication interface includes AI-enabled chatbots

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or virtual assistants that are enhanced by “Natural Language Processing” where it is easier for the consumer to interact with the machine. AI technology is also currently being used to prevent and detect fraud and enhance business security, which are particularly important in the risk management landscape where cyber threats are only increasing.

While artificial intelligence has many marketing applications, it is an essential component to optimizing a business’ supply chain and logistical operations. For example, it can map out a FedEx route and optimize the transit time spent delivering packages. AI learning machines are developing to include sentiment analysis to understand customer perspectives, which means a marketing team can then adjust its tactics to meet consumer expectations and sentiments. AI can also help companies track maintenance of equipment, breakdowns, and repairs (Baker, 2023).

AI is currently used in every imaginable industry such as production, healthcare, marketing, agriculture, education, transportation, information technology services and cybersecurity, energy, financial services, government, defense, and so many more. The current status and world-wide usage of AI indicates that it is not a fade technology, but a critical emerging technology that will face continued growth and adaptation. Thus, it is imperative that colleges and universities train the next generation of business leaders to use these powerful tools effectively and ethically. In order to meet this goal of an AI literate population of future business leaders, curriculum transformation must take place immediately. Educational institutions are already behind in teaching students the technical elements of AI and how AI-enabled processes apply to different business process and industries, in addition to ethics and governance skills needed to ensure the responsible implementation of these powerful resources.

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Educational Engagement with Existing AI Tools

When many people think of AI, they reference the generative AI tool ChatGPT, which is a valuable resource but only one of many AI tools. However, these generative AI tool have fueled an understanding in recent months that “AI has truly become a technology that any business or individual can leverage to revolutionize the way they work or go about any number of day-to-day activities” (Marr, 2023). ChatGPT can create memos, letters, resumes, poems, computer code, and many other written documents. This is a great tool for business professionals to save time in drafting basic documents and to improve other written correspondence.

Another tool is Dall-E 2 which will take a text prompt and create an image, photo, drawing or graphic (Marr, 2023). The ability to generate images based on simple text prompts is extremely helpful for the non-artist and for a quick rendering. In a business context, this ability to generate images can facilitate the creation of marketing materials that would otherwise require the experience of graphic designers and incur significant costs.

Outside of these written and image content generation tools, other AI-enabled tools serve areas that can facilitate other business activities and processes. For example, Lumen5 is “an AI-powered video creation tool that enables anyone to easily create education, marketing, or business video content using a simple drag-and drop interface” (Marr, 2023). This tool alone is a game changer for an entrepreneur and start-up firms with limited capital. Another helpful tool is Looka, a platform specifically designed to help with branding a business and generating marketing material. These are only a few examples of dozens of other AI-based tools and platforms such as the following: Soundraw, Podcastle, Lalal.ai, Deep Nostalgia, Murf, Legal Robot, Cleanup.Pictures, Fireflies, Krisp, and so many more.

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Thus, ChatGPT is just the tip of the iceberg of this technology revolution with deep impact for business executives and business students. Understanding this range of existing AI tools and resources is critical for designing AI business curriculums and educating students on the diverse AI technologies available to them in their future business careers.

Transforming Education

Just as industries can never go back to doing business without the Internet, or consumers do without the internet in their personal lives, the current digital world will not be able to turn back time regarding the use of artificial intelligence. It is already an engrained aspect of business operations for efficiency and innovation. The reality is that education at all levels, especially higher education, needs transformation. How students are taught and how they learn, in many cases, has not changed in decades, but it must in order to meet the expectations and changes occurring in the digital business environment.

These modern technologies will inevitably reshape the classroom and the business curriculum. It is the responsibility of educational institutions to prepare future leaders not only for the work world they will enter but the one that will evolve and change as well. Historically colleges and university professors have been slow to implement and teach emerging technologies because of the lack of knowledge of these areas and concerns about cheating/unfair advantages. However, “there are parallels between AI and other breakthrough technology. At one time, professors were wary of allowing students to use the internet, but now it is an indispensable learning tool” (Butterman, Patel, Garvey, Commerford, & Stone, 2023). The reality is that AI can solve complex business problems that humans are unable to solve and should be considered in improving the education of future business leaders.

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Additionally, it is clear that AI tools will change administrative practices at colleges as it aids in decision-making for recruitment, retention, recordkeeping, and finances. These technologies are supporting professors in creating quizzes, exams, simulations, assignments, and efficient grading. These technologies also support students in their learning by providing practice exam questions, answering questions, and suggesting changes to writing. Most importantly integrating AI into all business courses helps prepare students to enter employment able to tackle the AI tools that are already being used by their employers (Abdous, 2023). Since universities are considering how AI technologies may be used to improve the university processes, the consideration of advancing AI in the business classrooms and curriculums should be advanced.

In this context, introducing AI as part of the mainstream of college education requires much discussion and an understanding of the limitations of AI tools and the ethical responsibilities of their use. Institutions must create frameworks to follow before rolling out curriculum changes. As one analysis stated, “higher education institutions must carefully assess how AI will affect the labor market in the future. This analysis should lead to a rethinking of educational pathways to prepare students for a hybrid labor market in which AI will play a significant role” (Abdous, 2023). Thus, academic teamwork is required to ensure that AI competencies are implemented throughout the curriculum, which requires a transdisciplinary approach. As AI crosses technology and industry-specific expertise, collaboration across the university and its departments will be needed to create appropriate business curriculums. The integration of AI into business curriculums will not be an easy endeavor but a necessary evolution of change to prepare students for work tomorrow (Abdous, 2023). As professors start to think about adding AI components to existing classes and assignments, they must include

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teaching the responsible and ethical use of the many AI tools. Just as these tools can increase revenue and make lives easier, they can also harm people in the process.

Responsible & Ethical Use

While AI tools can have incredible and life changing impacts (better surgery techniques, stronger financial analysis of stock options, etc.), at the same time these tools generate ethical concerns as well. The use of AI can have issues of bias, environmental concerns, security issues, privacy concerns, facilitate a lack of trust, create the potential for misuse, development of moral concerns, and other issues. The benefits of AI are clearly substantial, but it is important that educators teach and promote ethical AI practices to ensure these AI tools are used responsibly and ethically both in the educational and business environment.

These new AI tools are created by humans and trained on real life data which means that AI algorithms and tools often reflect human biases. The result of this can lead to unethical decision making and discrimination. It is important that programmers, developers, and users look for and understand the potential unfair practices that might be built into AI tools that make decisions on hiring, lending, promotions, or other such activities (Arnold, 2023). Additionally, these bias issues are critical for business leaders to understand as part of their risk management responsibilities and oversight of these tools within the context of their firms, and, consequently, important for business students to appreciate.

Another challenge with AI is ensuring that the tool used can be explained to clients and consumers. Many important decisions will be made based upon an AI tool such as impacting healthcare decision making processes, facilitating financial analyses, or assisting in legal analyses. It will be critical that students who become future leaders can explain how and why the system made the decision and be transparent about the process (Arnold, 2023). This understand

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at the leader level is essential so they can communicate AI topics and challenges to clients and customers. The challenge of technology communication is an increasing issue in the digital business environment and AI is no exception to that challenge.

Furthermore, privacy is a continued concern regarding advanced technologies. Future business leaders must understand the need to protect private and sensitive information and to balance private interests and corporate business interests. There is clearly a demarcation between using data to make AI systems better and ensuring an individual's private information is protected. These general concerns are in addition to regulatory and legal responsibilities of a business leader and their firm to protect data they collect on their customers. For firms implementing AI enabled services or technologies, this understanding of privacy impacts will be essential for successful compliance and leadership.

These privacy concerns are in addition to considerations of security. Employers must also balance the need for secure electronic systems as AI in the future will influence not only corporate internal critical use systems, but also national infrastructure. Part of the responsibility of business leaders is ensuring the continuity of business and the mitigation of disruptions. Understanding how AI can facilitate or lead to disruptions is important for future business leaders and should be integrated in the context of teaching crisis management and business resiliency.

Conclusion

In conclusion, the integration of artificial intelligence into higher education courses holds transformative potential to reshape the future of education and to prepare students to emerge successfully into the technological workforce. By leveraging AI tools and methodologies, collegiate business educators can enhance learning outcomes, cultivate heightened critical

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thinking, and empower students to navigate the complexities of the digital business environment they are entering. However, it is critical that professors and policymakers prioritize teaching responsible and ethical use of these tools to ensure the leaders of tomorrow foster an inclusive and equitable environment for all. Educators cannot stop progress but can train students to embrace technology and be prepared for the world of work that has not even evolved yet. AI must be incorporated into lesson plans and curriculums to ensure students are ready for the leadership roles they will assume in the coming years. The business landscape is continually evolving with technological advancements including artificial intelligence and its sub-fields. Business students that are equipped with knowledge of AI will be better prepared to adapt to these changes and harness the opportunities presented by emerging technologies.

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