Unlocking the Transformative Power of Artificial Intelligence For Higher Education

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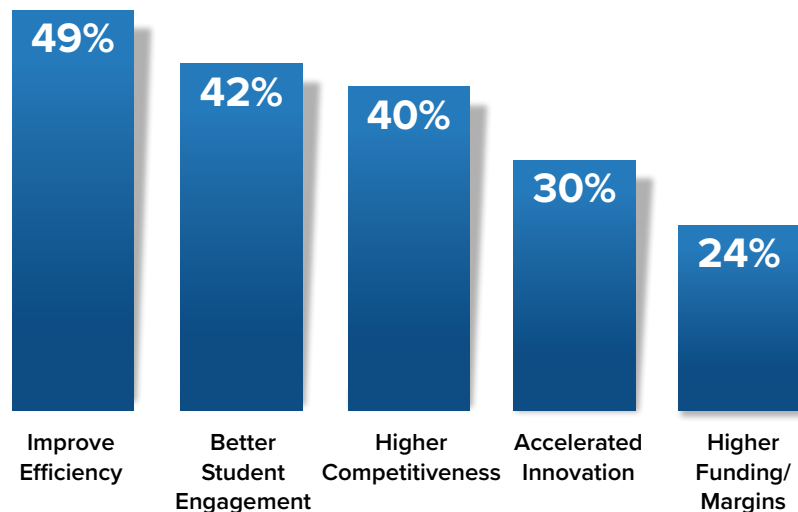*Sponsored by Microsoft* | October 2019

Artificial Intelligence in the Digital Era

Artificial intelligence (AI) is at the heart of digital disruption across nearly every industry. By 2019, 40% of digital transformation (DX) initiatives will be supported by AI capabilities, providing timely critical insights, richer and immersive user experiences and driving improved outcomes. AI will be a true differentiator. The organizations that have mastered it will take off, those that haven't will dwindle.

IDC forecasts that global AI spending will reach $97.9 billion by 2023. According to IDC's AI Global Survey conducted in May 2019, the top five business drivers to adopt AI in the education sector include, improvement in efficiency, better student engagement, higher

Artificial intelligence is poised to transform higher education and drive superior student outcomes through customizable and inclusive approaches to learning, productive learning and teaching behavior and increased institutional effectiveness.

FIGURE ONE: **Top 5 Drivers to Adopt AI in the Education Sector**

Improve Efficiency	Better Student Engagement	Higher Competitiveness	Accelerated Innovation	Higher Funding/ Margins
49%	42%	40%	30%	24%

Source: IDC AI Global Survey, May 2019 N=231 for Education

Public concern over AI's impact on jobs and privacy are growing.

competitiveness, accelerated innovation and higher funding (see Figure 1). AI will be able to make the educational experience more efficient and engaging, both for teachers and students, ensure continued innovation to optimize operations and enhance student engagements, as it reduces resource-intensive work among faculty and administrative staff. It will be instrumental to an educational institution's competitiveness.

Public concern over AI's impact on jobs and privacy are growing. However, IDC research has found that education leaders, educators and policy makers in the education sector believe that AI will augment jobs in their sector, not displace them. AI will assist teachers and make them better in their fundamental jobs. As AI solutions evolve, we expect that AI advances will create new jobs that didn't exist before, or that we didn't even imagine could exist. For example, before the internet existed, no one could have predicted that there would be jobs such as cybersecurity analyst or social media manager.

AI's Transformative Power for the Higher Education Sector

Formal education will probably never disappear completely, but new forms of education are becoming more and more important. Here are three ways in which AI is poised to revolutionize the higher education sector:

Customizable and Inclusive Approaches to Learning

- Technologies powered by artificial intelligence will finally solve the problem

of a "one-size-fits all" approach to teaching. Newer forms of education systems will learn as the students learn, understand their needs, be inclusive by having interfaces that adapt content according to students' special needs such as dyslexia, hearing/sight, language skills, and so forth, and support them with a tailor-made learning pathway. Students will be empowered to better understand which curriculum and competency development choices will help them reach their educational and career goals. Teachers will be able to identify the educational needs of their students and gain better insights on the best way to support them, pointing to where students are struggling the most. On the other hand, students will be able to move through their education more effectively, and talented students who are often bored by easy tasks will find new motivation and challenges. Also, learning analytics will accelerate the development of customized textbooks and course material based on an educator's core concepts.

Productive Learning and Teaching Behavior

- Human-computer collaboration could help students learn using new approaches. AI chatbots or digital assistants can provide one-on-one learning experiences, be available 24/7 to answer students' questions and can answer multiple queries per day – and some repeatedly without losing patience. Students can chat via text or voice conversations, and as use increases, it becomes smarter, reminding them about classes and deadlines. Tutors

Educational organizations need to forge partnerships with solution providers that can guide and help them accelerate their journey while ensuring consistency, privacy as well as ethics.

could help students adopt productive learning behaviors such as self-regulation and self-explanation, help relieve their stress while providing the flexibility for those who have other commitments, families or live in remote areas.

Increase in Efficiency

- AI has the potential to widen access and participation, improve consistency of education provisioning and relieve some of the pressures on teachers and lecturers who, in some cases, are drowning in administrative work. AI can have a knock-on effect on the well-being of teaching staff, and the ability to retain and recruit talent. Institutions will likely leverage AI to better automate and streamline accreditation and compliance activities, and to demonstrate greater transparency. AI also will help improve an institution's efficiency by effectively predicting resource usage and resource allocation needs, as well as supporting teachers' professional development, identify skills gaps, and so forth.

How Leaders in the Education Sector Address Challenges

According to IDC research, the top AI adoption challenges for the education sector range from a lack of an AI strategy, to a lack of thought leadership/leadership commitment to invest in AI, to a lack of skills, resources and continuous learning programs. Data readiness for AI is also lacking. Existing organizational culture is a challenge for educational institutions to move forward with their AI journeys. Business leaders need to both address a cultural shift and embrace a new culture, where innovation and continuous learning are core components of the organizational culture. Addressing the cultural issues sets the stage for agility, adaptability and growth. Educational orgnizations need to forge partnerships with solution providers that can guide and help them accelerate their journey while ensuring consistency, privacy as well as ethics.

Milano Graduate School of Business (MIP) is using various AI services to power FLEXA, an innovative, personalized continuous-learning platform and a digital mentor for students that delivers personalized education recommendations to the next generation of executives and business decision makers.

Diversity, inclusivity and accessibility are paramount in higher education. Dr. David Kellermann, of UNSW Sydney, has developed a solution to deliver a deeply engaging, highly personalized learning experience even as 350 students sit in a lecture listening to one academic at the front of the room. By turning to a suite of applications, Kellermann has pioneered a new approach to teaching a subject as detailed and advanced as engineering, offering capabilities that transform education without the pretense of reinvention, and that produces real gains in learning outcomes. His solution uses various bot and cognitive-based services to build a

model of educational AI that does things that humans can't practically do given the volume needed. AI connects people rather than automates processes, and AI trains itself to be more useful, and has no real edge or limit because of the connections it generates and the knowledge it accrues.

Conclusion

IDC believes AI innovations for the education sector will continue to be important, and subsequently grow over the next few years. With AI, teachers can be more productive, students can be more engaged, and learning outcomes can be improved.

About the Analyst

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Ritu Jyoti is Program Vice President, Artificial Intelligence (AI) Strategies with IDC's software market research and advisory practice. Ms. Jyoti is responsible for leading the development of IDC's thought leadership platform for AI Strategies and management of the newly formed AI Strategies research team.

Message from the Sponsor

Microsoft's Commitment to AI

Microsoft's vision for AI is first and foremost about people. AI advancements mean that millions of people need to transform themselves into the skilled and talented learners that the future needs. Microsoft AI's Business School is a master class series designed specifically for business leaders that will empower them to be successful and get results from AI. The AI Business School includes three modules — defining an AI strategy, enabling an AI-ready culture, and fostering responsible and trustworthy AI — and a fourth module that will introduce the full range of AI technologies that businesses could use to transform their organization.

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