Transforming Information Technology Education Through Digital Innovation

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***Jerum B. Dasalla, DIT**, is an Associate Professor at the Philippine State College of Aeronautics (PhilSCA), now the National Aviation Academy of the Philippines, where he plays a pivotal role in shaping the future of aviation and information technology education. He earned his Bachelor of Science in Computer Science from Emilio Aguinaldo College, followed by a Master of Education in Aeronautical Management (MEAM) at PhilSCA and a Master's in Information Technology at AMA University. Further honing his expertise, he pursued a Doctorate in Information Technology at AMA University. With a strong foundation in both academia and research, Associate Professor Dasalla has made significant contributions to scholarship, particularly in aviation and IT. His unique blend of technical expertise and industry insights enhances his role as an educator, allowing him to bridge the gap between theoretical learning and practical applications. His passion for information technology and aviation management, along with his unwavering commitment to education, continues to drive his initiatives, making a lasting impact in the region.*

Information technology instruction involves teaching and learning various aspects of technology, digital skills, and information systems. The education landscape is currently evolving due to digital innovation. Educators have realized the need to shift from traditional teaching-learning practices to strategies that can better prepare learners for a digital society. To achieve this, instructors integrate technology into their lesson plans and adopt innovative methods that are immersive, flexible, and convenient. This pedagogical shift has transformed IT education from content-based to competency-based.

The emergence of online learning resources has played a major role in transforming IT education. Learning Management Systems (LMS), virtual classrooms, webinars, and cloud-based collaboration tools have enabled students to access learning content from any location at any time. Moreover, these platforms allow learners to learn at their own pace. Instructors also gain access to comprehensive data that provides feedback on student performance. Online learning makes education more inclusive and personalized than ever before.

The use of artificial intelligence in learning systems is changing how IT is taught. AI-based instruction programs can help teachers and administrators track student performance and gauge learning gaps. AI can also recommend lessons based on student preferences and skill level. Intelligent tutoring systems, on the other hand, provide learners with feedback that helps them learn computing skills faster. Another important role of AI in IT education is that it automates instructors' workload. Automation saves teachers time that they can then use to focus on activities such as curriculum development and mentoring.

Virtual reality (VR) has also helped in changing how learners understand complex information technology (IT) skills. Using computer-based simulations, students can learn various IT skills interactively. For example, learners can put on a VR headset and tour computer networks, watch how cybersecurity experts breach security systems, and learn how software developers analyze and write code. In essence, VR provides students with a platform for experiential learning by immersing them in the work of IT experts.

We should be grateful for technology; students can access several software applications online without installing them on their laptops or desktop computers. Cloud technology allows learners to tap into online development environments and computing power to work on their school projects. Learners also collaborate with other students around the world by sharing data and information stored on the cloud. By accessing software in the cloud, students are better prepared for the digital workplace because they become familiar with the tools used by IT professionals.

Digital innovation has also affected how IT instructors design lesson plans and engage learners. Curriculum designers are now offering modules on emerging technologies such as artificial intelligence, big data, cybersecurity, blockchain technology, and the Internet of Things. Apart from changing the curriculum, technology has enabled instructors to adopt novel teaching approaches. For example, instructors use project-based learning, peer group collaborations, and flipped classrooms to

make learning more engaging. Such activities encourage learners to think outside the box, develop their problem-solving skills, and, most importantly, have fun while learning.

Integrating digital innovation into IT programs comes with its challenges. Schools will have to allocate more funds to improving their technological infrastructure, teacher training, and cybersecurity. Teachers also need to upskill regularly to keep up with the ever-changing technology. There is also a concern about digital equity, as students may be left behind due to their geographic location or social status.

Emerging technologies will continue to shape IT education in the coming years. Digital innovation will make learning more personalized than ever before. Technologies like artificial intelligence and machine learning will make education fully interactive. Instruction will no longer be limited by geographical barriers, as students from around the world learn together. With digital innovation, students can become better prepared for the future job market by learning skills that are not yet common in the workplace. For example, students should learn about emerging careers and technological trends, such as autonomous vehicles. Learners should also be taught how to be lifelong learners who can adapt to the ever-changing technological space. By integrating technology in education, students will graduate as professionals, innovative thinkers, and digital leaders.