

Transforming Aviation Training Through Information Systems

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Dr. Noel R. Navigar is a distinguished leader in both administration and academia, currently serving as the Administrative Officer V (Human Resources Management Officer III) at the Philippine State College of Aeronautics (PhilSCA), now rebranded as the National Aviation Academy of the Philippines (NAAP) following Republic Act No. 12255. With a career marked by pivotal roles, Dr. Navigar has held several high-impact positions, including Officer-In-Charge of the Office of the Vice-President for Administration and Finance from 2014 to 2017, Director of Administrative Services (2009-2017), Acting Director of the Flying School (2013-2017), and Director of the Institutional

Development and Planning Office (2012-2017). He also served as Dean of the Institute of Graduate Studies from 2018 to 2021 and as Director of the Research and Development Center, a role he held from May 2021 until September 26, 2025.

Aviation education broadly covers training, courses, and programs geared towards producing qualified personnel that meets the global demand for aviation experts. Aviation courses deal with pilot training, air traffic management, aircraft maintenance engineering, aviation safety, airport management and aviation administration, aviation information systems and security among other aviation related professions. Students learning aviation develop skills that prepare them to work effectively in aviation operations characterized with tough regulatory demands and complex technological systems.

Educational institutions are increasingly striving to align their curriculum with industry demands and technological advancements. Gone are the days when students could only learn through lectures and reading heavy textbooks. Education today is learner centered. Aviation schools are now making greater efforts to ensure their students gain hands-on experience, practicing what they learn in class through skills-based activities. Training programs now consider simulations, digital learning, anywhere-anytime learning resources and learning systems that are competency based. In addition, emerging technologies are being embraced in virtually every institution providing aviation education. This has seen drastic improvements in how students are trained with learning experiences being more efficient, effective, and interesting.

Information systems allow Educators to gain a Better Understanding of Aviation Systems

Information Systems allow students to learn, practice, and teach Aviation using virtual tools that facilitate easy understanding of aviation operating procedures.

Students use information systems to analyze aviation processes, break down operational data, and observe how things work in a virtual world. Information Systems help students in an aviation school to develop skills that support analysis, decision-making, and problem-solving in real-world operations.

Information Systems help educators teach students how every aspect of Aviation works. Every technical system that operates an aircraft can be learned through simulations. Student pilots can learn how to fly planes using flight simulations. Learning in simulation-based training environments improves learning because students can learn how things work in real-world settings, without the costs and risks of training. Flight simulation will allow the student to fly the aircraft and learn the necessary skills for free movement within the aircraft and campus. Through simulations, instructors can monitor student progress and provide feedback on areas that need improvement.

Information systems allow students to learn how every aspect of aviation operates. Air Traffic controllers use simulations to learn how aircraft are separated and how traffic flows are coordinated. Students can gain first-hand experience on the airport ramp by using parking or hangar management simulations to learn how aircraft are parked and serviced. All these technologies allow students to put into practice what they have learned in theory. Teaching Aviation comes with great responsibility because people's lives depend on the quality of education you provide. Using information systems in teaching can improve your skills and deepen your understanding of the industry.

Developments In Aviation Education

As with any other industry, aviation education and training have undergone major changes over the years. Recently, there has been a great shift from learning through lectures and paper textbooks to digital learning. There are learning management systems specifically designed to meet the needs of aviation students. Students can now learn anywhere and at any time. Learning management systems are online platforms that provide students with learning resources such as lessons, quizzes, simulations, and more. Students can study at their own pace while still communicating with the teacher and other students. Virtual Reality (VR) Aviation training tools are also being introduced into learning institutions. VR gives students an opportunity to learn using real-life scenarios.

The integration of technologies such as Artificial intelligence (AI) into classrooms and simulations is no longer a thing of the future. Aviation Education 4.0 has been developed and adopted by most learning institutions. Aviation 4.0 broadly covers digital training, automation, and aviation-related careers in big

data. Universities are now working hand in hand with the aviation industry to provide students with education that meets current workforce demands. Innovation and technological improvement continue to shape aviation learning. Universities are involved in research that improves technology and develops better learning systems that effectively train students. The integration of technologies has helped reshape how students are taught in aviation schools.

Conclusion

Aviation professionals work hand in hand to provide the world with safe, efficient, and reliable air transportation. Ensuring students are equipped with the skills that support their daily lives is key to delivering quality education. As we continue to learn about new ways to incorporate technology into learning, we should also make a greater effort to test how these technologies can be used in education. Flight simulation, Digital learning, and VR are all tools that schools can integrate into their curriculum. Technologies like these provide students with an opportunity to practice what they learn in school.