Chapter 5

Educating Aviators: Challenges for Distance Learning in Aviation Tertiary Education

Tarryn Kille  
Griffith University, Australia

Paul Bates  
Griffith University, Australia

Patrick S. Murray  
Griffith University, Australia

ABSTRACT

This chapter provides a critical examination of the evolution of distance education in tertiary aviation programs. By reviewing the literature and studies associated with Professional Pilot training, the chapter explores the issues affecting the delivery of distance education in university Professional Pilot programs, including the global shortage of Professional Pilots, the nature of work as a Professional Pilot, the importance of simulation, and the integration of assessment. In an effort to address some of the challenges, this chapter also offers recommendations and solutions. The authors contend that tertiary aviation distance education programs need to be adjusted to consider the needs of the student and industry by: (1) implementing action-based learning, (2) considering pedagogy before technology, (3) encouraging interaction and collaboration, and (4) embedding formative assessment. The chapter aims to contribute to the body of literature aimed at enhancing the effective delivery of distance learning in aviation tertiary education.

INTRODUCTION

Distance education is becoming an increasingly significant issue in the field of aviation education (Pratha, 2006; Scarpelline & Bowen, 2001). In tertiary institutions, distance education delivery has evolved to include the use of e-learning tools. With training needs in the aviation industry expected to grow to more than 40 percent (Fullingim, 2011) in the next decade, online distance learning provides the potential to meet this increased demand (Raisinghani et al., 2005).
Over the last two decades, the implementation of aviation distance education in Professional Pilot training has proved troublesome. However, in this chapter we argue that the awkward evolution and transition to distance education in aviation is the result of underlying pedagogical approaches to learning and teaching in the years of technical skill training delivered outside of the tertiary environment. While the benefits and advantages of online distance education are widely accepted amongst scholars and key industry stakeholders, we contend that none of the advantages of e-learning will be realized unless its application is bolstered by sound instructional design principles, which are specifically adapted to address the needs of the student.

In this chapter, we discuss the evolution of distance education in university Professional Pilot programs. The historical overview of distance education is presented as a critical examination. This critical examination encompasses the environmental impacts on the aviation industry, the delivery of aviation education in tertiary institutions, and the knowledge and skill requirements of the modern Professional Pilot. As a result, four issues are discussed highlighting the emergence of key propositions for research and practice specific to the aviation discipline. These issues affecting the delivery of distance education in university Professional Pilot programs include: the global shortage of Professional Pilots; the nature of work as a Professional Pilot; the importance of simulation; and the integration of assessment. In an effort to address some of the challenges for distance learning in aviation tertiary education, this chapter also offers some recommendations and solutions. We contend that tertiary aviation distance education programs need to be adjusted to consider the needs of the student and of industry by: (1) implementing action-based learning; (2) considering pedagogy before technology; (3) encouraging interaction and collaboration; and (4) embedding formative assessment. It is hoped that the chapter can contribute to the body of literature aimed at enhancing effective delivery of distance learning in aviation tertiary education.

**BACKGROUND**

The application of technology in higher education has received increasing attention in the past two decades (Kirkwood & Price, 2014). Two important movements have stimulated this attention including the emergence of online teaching into the everyday practice of university business and the rise of distance education programs offered throughout the higher education sector (Larreamendy-Joerns, 2006). The two movements have forced changes to the delivery of higher education that has had, and will continue to have, an effect on student learning now and into the future (Simmons, 2007).

In the case of distance education, the principle stimulus for change has been the emergence of new technology (Moore & Kearsley, 2012) including the significant growth of the internet as a global medium for telecommunications. Many aspects of the learning process, ranging from information delivery, interactivity and communication, to the evaluation and assessment of learning outcomes, can now be offered through vastly accessible online and internet-based platforms (Thomas, 2003). This method of education delivery is now widely marketed as ‘e-learning’ or ‘online learning’ (Moore & Kearsley, 2012).

Distance education has been defined as “all arrangements for providing instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor or instructors” (Moore, 1990, p. xv). In the aviation industry, where Professional Pilots requiring frequent training are regularly travelling across the globe, the advantages of an educational delivery mode that transcends time and space is particularly attractive. According to Jonassen, Davidson, Collins, Campbell, and Haag (1995), much of the literature associated with this definition of distance education placed an emphasis on the administration of this method and the emerging technologies. What followed in the case of online distance education in the aviation discipline was the continued transmission based approach. While
Related Content

Knowledge Representation in Intelligent Educational Systems
www.igi-global.com/chapter/knowledge-representation-intelligent-educational-systems/27516?camid=4v1a

Mobile Applications in Higher Education: Implications for Teaching and Learning
www.igi-global.com/article/mobile-applications-in-higher-education/217471?camid=4v1a

Effects of Implementing STEM-I Project-Based Learning Activities for Female High School Students
Shi-Jer Lou, Huei-Yin Tsai, Kuo-Hung Tseng and Ru-Chu Shih (2014). International Journal of Distance Education Technologies (pp. 52-73).
www.igi-global.com/article/effects-of-implementing-stem-i-project-based-learning-activities-for-female-high-school-students/111227?camid=4v1a

Ranking the Difficulty Level of the Knowledge Units Based on Learning Dependency
Jun Liu, Sha Sha, Qinghua Zheng and Wei Zhang (2012). International Journal of Distance Education Technologies (pp. 31-43).
www.igi-global.com/article/ranking-difficulty-level-knowledge-units/62286?camid=4v1a