Chapter 6
Digital Transformation in Aviation Education:
Post COVID–19

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ABSTRACT

Aviation is one of the leading industries in the application of emerging technologies. There were several epidemics affecting the development of the industry globally. Competent human resources and their training with updating technological skills are some of the basic solutions for getting out of such crises. The aim of this chapter is to emphasize the significance of digitalization in aviation education for upskilling the future workforce requirements as aviation rebuilds over the COVID-19 pandemic. For that reason, the content determined as explaining first the COVID-19 impacts on worldwide air transportation then listing the previous studies on pandemic and aviation education the categorization is revealed 'pre-during-post pandemic aviation education' to take place as a period in the literature. The role of aviation educational organizations and policymakers are studied, and in the process of digital transformation, future skills are discussed. In the last part, the experiences of the educators during the pandemic process were discussed through interviews.

INTRODUCTION

The pandemic, created by a mutated virus species belonging to the influenza virus family, which first started in Wuhan, China in 2019, has managed to show its effect all over the world in a short time. It has taken first place on the world agenda, effectively in more than 190 countries, especially by increasing the death rates in 25 countries (Macit & Macit, 2020). After that, World Health Organization (WHO) declared the Covid-19 as a global pandemic on March 11, 2020 (Puspitasari, Yusuf, Sinuraya, Abdulah,

& Koyama, 2020). Although it affected all sectors in the world, it left deep traces in aviation. There have been many crises, terrorist incidents, and epidemic periods in the history of the aviation industry. However, none of them has damaged the Aviation Industry as much as the Covid-19 Pandemic Period. This virus, which spread rapidly all over the world after the first case was seen in China, brought Civil Air Transport to a standstill.

As a result of the global epidemic caused by the spread of Covid-19, countries and cities have made local quarantine decisions. The most important reason for this was that the cases of intubated patients and deaths continued to increase. Health policies that changed at the regional base created uncertainty for socio-economic life. International travel restrictions have significantly reduced global traffic. The negative effects of the restrictions spread to many industries globally. Flight cancellations and reductions in the capacity of up to 60-80% shortened the air market and airlines faced an unprecedented crisis (Sobieralski, 2020).

In this sense, the air transport is seen as the perpetrator of the rapid spread of the Covid-19 to the world. Because it is assumed that the direct or connecting flights from the countries where the disease is seen affect the spread of the virus to the countries (Sohrabi, et al., 2020). For this reason, countries suspended bilateral aviation agreements and stopped reciprocal flights, soon after the WHO's declaration of the pandemic (ICAO Safety Report, 2020) (Debyser, 2019). After the United States of America (USA) suspended flights to China and the Far East, the European Schengen Area followed that decision. The air traffic flight bans that started with China caused to stop aviation activities among counties in the world. The cost of USA flight restrictions to airlines has reached $20.6 billion in annual passenger revenues (IATA, 2020). Travel restrictions and closure measures implemented to prevent the spread of the Covid-19 pandemic have negative effects on the economy (Nicola, et al., 2020). Countries have brought aviation industry incentive laws to their parliaments to recover the aviation industry, which was in trouble to get out of the crisis (Sobieralski, 2020). Despite these incentives to assist this heavily damaged industry, the impact of Covid-19 on the aviation industry's current workforce and trainees continues at the end of 2021, when this chapter is being prepared. According to the ICAO (International Civil Aviation Organization) report (2011), it is estimated that 25 thousand new aircraft will be added to the existing 17 thousand commercial aircraft fleet worldwide by the airlines in the next 20 years. That means the aviation workforce market would require 480,000 technicians and 350,000 more pilots by 2026 (ICAO, 2011). Despite the regression due to Covid-19, qualified human resources are needed in all branches of the aviation industry (Sun, Wandelt, & Zhang, 2021). It is not enough to just recruit staff for the aviation industry. It is important to provide the necessary skills to the new generations that will form the future aviation workforce.

Aviation education starts with the selection of human resources training of the desired quality and continues with theoretical and practical vocational training. Then, it is aimed that the qualifications of the personnel will reach the desired standards through in-service training in the sector. In order to ensure flight safety, standard training, measurement, and evaluation must be guaranteed by an authority and successful persons must be licensed by the authority. Educational interruptions due to the pandemic have affected the planning of aviation training organizations.

In this context, the ICAO-NGAP (Next Generation of Aviation Professionals) vision statement highlights a global aviation community with "adequate human resources" to support a safe, secure, and sustainable air transport system. The NGAP mission statement emphasizes, "Developing strategies, best practices, tools, standards and guidelines as applicable and facilitating knowledge sharing activities that

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