Utilizing Guided Simulation in Conjunction with Digital Learning Tools in Air Traffic Control Training

Allison Little  
Embry-Riddle Aeronautical University

Benjamin Cook  
Embry-Riddle Aeronautical University

Holly Hughes  
Embry-Riddle Aeronautical University

Kyle Wilkerson  
Embry-Riddle Aeronautical University

Jacqueline Luedtke  
Embry-Riddle Aeronautical University, jackie.luedtke@erau.edu

Follow this and additional works at: https://commons.erau.edu/publication

Part of the Aviation and Space Education Commons, Aviation Safety and Security Commons, Higher Education Commons, and the Other Education Commons

This Poster is brought to you for free and open access by Scholarly Commons. It has been accepted for inclusion in Publications by an authorized administrator of Scholarly Commons. For more information, please contact commons@erau.edu, wolfe309@erau.edu.
Authors
Allison Little, Benjamin Cook, Holly Hughes, Kyle Wilkerson, Jacqueline Luedtke, and Jennah Perry
Utilizing Guided Simulation in Conjunction with Digital Learning Tools in Air Traffic Control Training

Little, A.M., Cook; Benjamin D.C.; Hughes, H.; & Wilkerson, K. 
Luedtke, J.R.; Perry, J.

Abstract

- For students in an air traffic control discipline, simulated training time is limited to in-class time and is divided among the entire class. Students are required to advance and obtain knowledge, skills, and abilities in the lab because there is almost no way to practice at home. All students learn at different rates as well as through different learning styles. Swivl is a digital learning/capture tool designed to enhance student learning by allowing students to refer back to the individual classroom lab training session via an online portal.

- Swivl is currently being used in two ATC Lab courses. There are two technological deficiencies that have arisen: (1) Swivl (in the Terminal Radar Approach Control and En-Route Radar environments) lacks the ability to record what is being said over the frequencies. (2) Swivl does not have the ability to focus on the radar scope targets. As a result, the students’ captures have a deficiency in visual clarity. However, the nature of the tower simulator does allow for better visual acuity and effective communication exchange within the Swivl capture.

- Currently Professor Perry as well as the ATC lab assistants are researching electronic sources that could enhance Swivl's ability to be a leading digital learning tool in air traffic control simulation.

- Future research will include looking for a way to integrate two audio sources into the same review session. It is important for ATC training that the student can review what is happening in the scenario as well as instructor feedback.

- Additional research will focus on a program that sharpens the video image. While the audio is the most important aspect of the training, it would help to be able to better identify what call signs are what radar targets on the scope.

Next Steps

Conclusions

Swivl proved to be ineffective in the en route and terminal radar approach environments. At Embry-Riddle this includes classes such as AT-305, 401, 405 and 406. The audio and focus problems were not total set backs for student progress, however without technical fixes we will no longer have a use for Swivl in these classes. In the tower simulated environments (such as AT-315 and 415) Swivl was much more effective. Students have been able to review in-class scenarios with more visual acuity. The nature of tower simulation allows for fewer necessary audio transmissions, which means that the audio problem we had in the other classes isn’t as big of a problem in these classes.

Links

Watch this demo video to see how Swivl works!

AT Class  | Ineffective with Swivl problems | Effective with Swivl problems
--- | --- | ---
305 | ✓ | |
401 | ✓ | |
405 | ✓ | |
406 | ✓ | |
315 | | ✓
415 | | ✓