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Incorporating Digital Learning Tools in Conjunction with Air Traffic Control Simulation

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Incorporating Digital Learning Tools in Conjunction with Air Traffic Control Simulation

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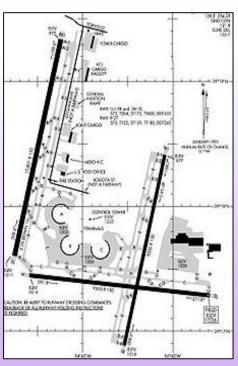*Perry, J.; Luedtke, J.R.; Little, A.M.; Wilkerson, K.; Cook, Benjamin D.C.; Hughes, H.*

Abstract

➤ Learning and applying complex information at a fast rate can be challenging for students within an air traffic control-training program. Incorporating digital learning tools into an air traffic control training programs may increase student learning and success rates. Swivl is a digital learning capture tool designed to enhance student learning by allowing students to refer back to their individual classroom lab training session videos via an online portal. Embry Riddle's air traffic program has started using Swivl in two separate ATC courses in order to determine if it is a viable solution to increase learning.

➤ During our research, we have come to the conclusion that Swivl is most useful in the air traffic control tower simulator, and has shown to be an effective learning tool thus far from the teacher's perspective. Additional student feedback and analysis is forthcoming. Swivl has the potential to be an effective tool in ATC training and may enhance learning by allowing students to sharpen skills that are necessary to advance in the field of air traffic control. The air traffic control-training academy (used to train air traffic controllers hired by the federal government) has a high failure rate. Incorporating digital learning tools in that setting may increase success rates as well.

Conclusions

Swivyl 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 Swivyl in these classes. In the tower simulated environments (such as AT-315 and 415) Swivyl 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.

Next Steps

➤ Due to the potential effectiveness of Swivyl in the tower environment, Swivyl will be integrated into the Introduction to Air Traffic Control Tower class as well as the Advanced Air Traffic Control Tower class later this year.

➤ In order for Swivyl to be effective in the Terminal or En Route environments, 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.

➤ 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.

Links

Watch this demo video to see how Swivyl works!