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# **Flight Simulator Transfer of Training Study**

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the requirements for the degree of Master of Aviation  
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## Abstract

This purpose of this research was to investigate the training effectiveness of two different flight simulators, when student pilots enrolled in a university aviation degree course were trained to fly an instrument holding procedure. A PC-based simulator and an approved instrument simulator were used to teach two experimental groups to fly a Non-directional Beacon (NDB) holding instrument procedure. Their time to reach proficiency and their flight performance in a Cessna 172SP aircraft was compared to a control group that was trained solely in the aircraft. A Pre-flight Questionnaire was used to establish the participants' previous PC-based simulator experience and their current attitudes towards their use. Flight data was recorded to determine the participants' performance when flying the NDB holding pattern in the aircraft and the resulting flight times were used to determine the Percent Transfer and Transfer Effectiveness Ratio (TER) of the approved instrument simulator and the PC-based simulator. The Cost Benefit equation was used to determine the financial savings resulting from the use of these simulators. A Post-flight Questionnaire was used to determine the flight instructor's opinion of the participants' flight performance when flying the NDB holding pattern. The results of this study were unable to confirm significant differences between the two experimental simulator groups and the aircraft control group, however there were indications that prior training in a simulator reduced flight time to criterion and there was a small but positive Percent Transfer and TER. The Cost Benefit analysis revealed that there was generally a negative cost benefit as a result of the small TERs and the relatively close operational cost of the aircraft and simulators. The study concluded that although the transfer of training effects of the simulators were small, they were still a positive indication of what PC-based simulators and approved instrument simulators are capable of as computer technology continues to improve. The study recommended that further research using PC-based simulators to train complicated instrument procedures is required with a larger sample size.

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