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The Effect of Gaming on Novice Pilots

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Abstract:

Global aviation is suffering pilot shortage, and by 2032, it is expected that international aviation will be 80,000 pilots short. Hence, there is an immediate need to identify ways to expedite pilot training. Researchers have found that gaming positively impacts cognition and hand coordination. Specifically, the abilities of people with expertise levels in video gaming have significantly improved performance scores in many flight simulators. However, these studies lack generalization due to the small sample size. This study investigates whether prior gaming experience impacts the flight performance of novice pilots using a large sample size, flight simulator, and eye-tracking metrics. We will recruit two student groups for this study: students with little or no prior gaming experience and students with significant gaming experience. The groups will be created from undergraduate students at KSU and will be formed exclusively based on their prior experience with gaming as experienced and novice gamers. Both groups will receive initial training on basic operations and controls of an aircraft using a flight simulator and a video. After the initial training, students will be asked to fly a straight and level mission on the simulator (maintaining a consistent altitude, heading, and attitude). During this task, participants will wear eye-tracking glasses to record what controls their eyes were attending to. They will also be graded based on a rubric. The qualitative and quantitative data will be processed manually and via iMotions software. Results will help determine whether there are statistically significant differences in how the two groups learn to fly the aircraft.