



FLIGHT STUDENTS AND FAA KNOWLEDGE EXAMS: A REVIEW OF EXISTING LITERATURE

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ABSTRACT

To become a certificated pilot in the United States, there are certain requirements that must be met. One of these requirements is for applicants to pass a knowledge exam (commonly referred to as a “written exam”). These exams are administered by the Federal Aviation Administration (FAA) and applicants must achieve a score of at least 70% to pass the exam. While this all seems simple enough, existing literature has identified potential issues with this process, such as deliberate student memorization of questions and outdated exam questions. Still, student performance on FAA knowledge exams remains a relatively underexplored area of study within the aviation education literature. Stemming from a seminar presentation delivered in October 2022 at the Collegiate Aviation Conference and Expo, hosted by the University Aviation Association, this poster highlights a forthcoming essay that reviews the existing literature concerning the performance of students on FAA knowledge tests, and related issues. While this project does not specifically focus on data collection, based on the literature reviewed, the essay will propose recommendations for future research, including studies examining how students prepare for these exams and effective pedagogical methods for flight instructors or professors to employ in preparing students for FAA knowledge exams.

BACKGROUND

- In accordance with federal aviation regulations, individuals must pass a knowledge test as part of the process to become a certificated pilot.
- The Federal Aviation Administration (FAA) administers 73 different knowledge exams for various certifications and ratings. These exams range from private pilot and airline transport pilot certifications to flight instructor, glider, sport pilot, aviation maintenance technician, and even hot air balloon pilot certifications.
- In 2022, there were a total of 224,474 FAA knowledge tests administered. The average scores and pass rates across these different exams vary, though generally the pass rates are high. Moreover, the volume of applicants taking these different exams also varies. For instance, in 2022, 38,893 individuals took the “Private Pilot Airplane” exam, while 1,032 individuals took the “Private Pilot Helicopter” exam and only 4 individuals took the “Private Pilot Gyroplane” exam (FAA, 2022).

EXISTING LITERATURE

- **Counts (2013)** found, among other things, that **57%** of participants at the **private pilot level** indicated they had attempted to memorize questions and answers from “prep software or literature” (p. 39); **93%** of participants at the **commercial pilot level** indicated they had attempted to memorize questions and answers from “prep software or literature” (p. 43); **95%** of participants at the **instrument pilot level** indicated they had attempted to memorize questions and answers from “prep software or literature” (p. 46).
- **Winter et al. (2015)** studied the consistency of aviation students when taking the knowledge test required for certification as a private pilot. Their study found that across two exams, participants were very consistent in their responses and that participants generally self-assessed their own consistency on both exams as “above neutral” on a Likert scale.
- **Summey et al. (2004)** found there was no significant difference between the exam scores of students from 4-year universities and 2-year colleges taking the FAA aircraft mechanic knowledge exam.

FUTURE RESEARCH RECOMMENDATIONS

- Further research should be conducted in three key areas: (1) determine if results found by Counts (2013) can be replicated at other institutions, including—as Counts (2013) recommends—non-collegiate flight students; (2) assess the impact of commercial test preparation products on flight student performance on knowledge exams and survey flight students to determine what study methods they employ in preparing for FAA knowledge exams; and (3) survey flight instructors and collegiate aviation professors to determine what pedagogical methods they employ to prepare students for FAA knowledge exams and determine the extent to which they encourage students to avoid test question memorization.

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