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Air Traffic Selection & Training (AT-SAT) Test Success Predictability and Preparation

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The College of Aviation entered into an Air Traffic Collegiate Training Initiative (AT-CTI) partnership agreement with the Federal Aviation Administration (FAA) in April 2010. This partnership allows WMU College of Aviation students to participate in the FAA’s AT-CTI program which will shorten their time at the FAA academy if they successfully apply for Air Traffic Control Specialist positions with the FAA.

WMU aviation majors must complete their degree program and take specific AT-CTI elective courses to graduate from this FAA initiative. When AT-CTI students are within 12 months of graduation they are eligible to take the FAA’s pre-employment exam for air traffic controllers called the Air Traffic Selection and Training (AT-SAT). Students must earn a passing score on the exam for air traffic controllers called the Air Traffic Selection and Training (AT-SAT) examination to be considered for employment as an air traffic controller.

The College of Aviation entered into an Air Traffic Collegiate Training Initiative partnership allows WMU College of Aviation students to participate in the FAA’s pre-employment exam for air traffic controllers called the Air Traffic Selection and Training (AT-SAT). Students must earn a passing score on the exam for air traffic controllers called the Air Traffic Selection and Training (AT-SAT) examination to be considered for employment as an air traffic controller.

We are attempting to determine whether the College of Aviation can use a pretest instrument to assess a student’s ability to achieve a passing score on the AT-SAT test battery. If a successful pretest instrument is found, then we would use it to help us with curriculum improvements and student career counseling to improve our student’s chance of successfully completing the AT-CTI program.

The AT-SAT is an aptitude test and does not test an applicants air traffic control knowledge. The test is only available through the FAA and is administered via computer. The test battery consists of 8 subtests that are shown in table below. Seven of the subtests are designed to assess cognitive ability, while the eighth subtest assesses issues in personal history and personality.

All subtests are weighted and combined into a single composite score. Applicants that score 70 – 84.9 are classified as “qualified” and those who score 85 and above are classified as “well qualified.” Job applicants that score as “well qualified” are considered for employment before considering applicants in the “qualified” pool. If an applicant scores below 70, they are considered not qualified and are not eligible for hire as an air traffic controller.

AT-CTI students who do not achieve a passing score on the AT-SAT exam may retest one time, but must wait 1 year before retesting. If an applicant receives a passing score in the qualified range, they may not retest to try to improve their score into the well qualified range.

The Tabular Speed Test is being administered to all current AT-CTI students at WMU who are actively taking the required air traffic control coursework. The data will be collected and stored for evaluation and comparison to the students’ results on the FAA’s AT-SAT examination taken during their senior year.

If a correlation between the Tabular Speed Test and the AT-SAT exam is found, further research will be done to determine if curricular improvements can be made to help improve the success rate of students on the AT-SAT.

This project is still in progress and does not have the required data to yield results. Several students have been administered the Tabular Speed Test, but they have not yet taken the AT-SAT examination. So far only one student has been tested by the FAA, but several more are scheduled to be tested in the next 2-3 months.

We will continue to test students as they start the air traffic control coursework for comparison after they take the AT-SAT exam. When an adequate sample size has completed both testing processes we will analyze the data for correlations and determine the next steps based on the outcomes.

The Tabular Speed Test is a standardized psychometric testing instrument and its origins date back to 1942. The original version of the test was called the Table Reading Test and was used by the United States military to help select suitable candidates to become pilots, bombardiers and navigators in aircraft. A version of the Table Reading Test is still used by the United States Air Force as part of their Air Force Officer Qualifying Test (AFOQT).

Development of the Tabular Speed Test began in 2003 and is based conceptually on the Air Force’s Table Ready Test. It is a slightly longer test and has no actual items in common with its predecessors.

The test consists of 50 similar questions and the applicant has 9 minutes to complete the assessment. The test is designed so that most applicants cannot complete it within the time allotted.

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dials (DI)</td>
<td>Scan and interpret readings from a cluster of analog instruments</td>
</tr>
<tr>
<td>Applied Math (AM)</td>
<td>Solve basic math problems as applied to distance, rate and time</td>
</tr>
<tr>
<td>Scan (SC)</td>
<td>Scan dynamic digital displays to detect targets that regularly change</td>
</tr>
<tr>
<td>Angles (AN)</td>
<td>Determine the angle of intersecting lines</td>
</tr>
<tr>
<td>Letter Factory (LF)</td>
<td>Participate in an interactive dynamic exercise that requires categorization</td>
</tr>
<tr>
<td>Air Traffic Scenarios (ATST)</td>
<td>Visual traffic interactive, dynamic low-fidelity simulations of air traffic situations requiring prioritization</td>
</tr>
<tr>
<td>Analogies (AY)</td>
<td>Solve verbal and nonverbal analogies that require working memory and the ability to conceptualize relationships</td>
</tr>
<tr>
<td>Experience Questionnaire (EQ)</td>
<td>Respond to Likert scale questionnaire about life experiences</td>
</tr>
</tbody>
</table>

### Literature Cited

