Train, Test, Send out the Best: Teaching styles and student achievement among military training

Jessica A. Siehl
University of Dayton, stander@udayton.edu

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Introduction

The purpose of this study was to examine if there was a relationship among teaching style and student achievement. Two teaching styles were used throughout the course of this study. Nine exams in two different courses were examined.

Methods

- 57 student test scores were retrieved during mandatory military training
- Scores were retrieved and analyzed using QuestionMark, a data system that generates tests to students and populates a testing analysis and test scores
- The 57 students are required to come train at the School of Aerospace and Medicine for their designated career field, Bioenvironmental Engineering
- After lessons are taught students are required to take a written exam to articulate the knowledge gained during the class lesson

Research Questions:

- Was there a relationship among teaching style and student achievement?
- Was there a relationship between student interest and student retention?

Data Analysis

- H0: \( \mu \) Hands on Class = \( \mu \) Lecture Class
- H1: \( \mu \) Hands on Class \( \neq \) \( \mu \) Lecture Class

A T Test was performed to analyze the scores for both courses.

Literature Reviewed

- Traditional means of teaching is lecture style
- Studies have shown that education has shifted from an instructor centered approach to a learner centered approach
- Student engagement is critical to the learning process; if a student is not showing that they are engaged researchers believe students are not learning
- Learning occurs when individuals are pushed beyond their understanding and skills of a subject
- Student learning styles are different and instructors must learn many techniques to be sure all students have the same opportunity
- Goal Theory identifies teaching as a focused practice or as a performance focused practice
- Research has shown that teaching styles are the most important factor in student achievement

Statistical Analysis

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<th>TS</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
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<tr>
<td>Hands on</td>
<td>28</td>
<td>87.12</td>
<td>4.6</td>
<td>1.6</td>
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<tr>
<td>Lecture</td>
<td>31</td>
<td>86.98</td>
<td>6.3</td>
<td>2.1</td>
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Sample T Test

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<tr>
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<td>( p )-value</td>
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<tr>
<td>Lecture</td>
<td>( p )-value</td>
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<table>
<thead>
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<th>Lower</th>
<th>Upper</th>
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<tr>
<td>Lecture</td>
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Results

- A T Test failed to reveal a statistically reliable difference among the mean value of the average test scores that the hands on class has and the lecture class has
- The results failed to reject the null hypothesis
- The study failed to observe a difference in average score among all 9 exams between the two classes

Conclusion

- This study challenges some of the literature that was presented
- Due to the criteria that must be taught no matter how the instructors formatted the lesson, hands on or lecture they had to get the information to the students in a manner they would understand

References