# Student Delivery and Discovery Skills and Performance in Animal Science Courses

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If we believe that the ultimate goal of teaching is learning, then our mission as an instructor is to generate learning in anyway that <u>works best (is the most effective)</u>.

# Introduction

- **Student's success & degree completion is of great concern to students, parents, the university, and society in general [Adelman, 1994].**

- **Students success requires, in part, good study skills  [DeBerrad et al., 2004].**

- <span style="color:red">**Due to student personality and skills differences**</span>**, there is no guarantee that students will be satisfied and learn with the course delivery methods.**

# Introduction

- **Test taking (r=0.286, p=0.011), note taking (r=0.224, p=0.048), and analytical thinking and problem solving (r=0.362, p=0.001) skills were positively correlated with GPA achievement [Rahim & Meon, 2015].**

- **Vocabulary skill scored the highest mean with 3.01/4.00, followed by test taking (2.88) and analytical thinking and problem solving (2.80) [Rahim & Meon, 2015].**

# Do students' personal skills impact their performance?

# Objectives

- **To investigate the relationship between two types of students' personal skills and their performance, as measured by course grade**

# Methods

- <u>Population:</u> n = **55**
  - Animal and Veterinary Science (AVS 222 , AVS 363)
    - "Animal Reproduction and Breeding"
    - "Animal Products for Human Consumption"

- <u>Courses Background:</u>
  - Spring 2013
  - **3** Credit Courses
  - **3** Exams (2 Mid-Terms, 1 Final)
  - Taught by Full Professors
    - Recognized for their outstanding teaching in Animal Science

# Methods-Data Collection

- At the end of the semester, a 20-question survey was used to assess an individual's **Delivery and Discovery skills**

- <u>**Delivery Skills:**</u>

  - planning, attention to detail, implementing, disciplined executing, note taking, test taking

- <u>**Discovery skills:**</u>

  - Associational thinking, questioning, observing, networking, analytical thinking, and experimenting,

(Dyer, Gregersen, & Christensen, 2011)

# Methods

- **Discovery and Delivery types were measured on a scale of 0 to 50.**

- **Skill scores for each type (Delivery & Discovery) were categorized into three levels:**

- **High (H; 43-50)**

- **Moderate (M; 33-42)**

- **Low (L; ≤ 32)**

# Data Analysis

- **Statistics:**

  - **Proc GLM of SAS 9.2 ®**
    - **Model tested the effect of course, skill level, two-way interaction**

  - **Pearson Correlation**

- **Limitation: Census of specific population, audience should generalize with caution.**

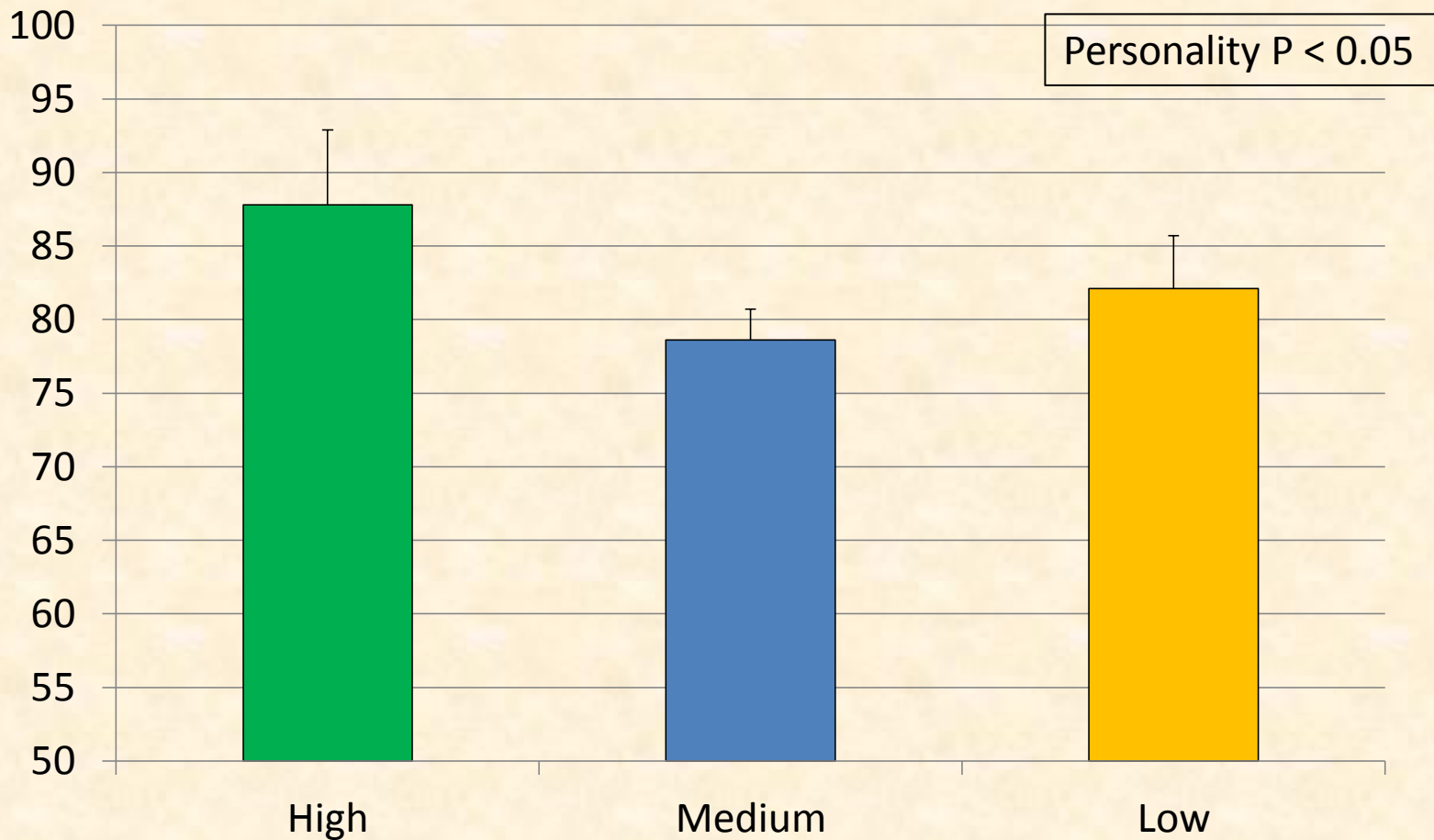# Association between Delivery Skill and Overall Course grade

| Variable | Grade (r) | P value |
|---|---|---|
| Delivery Skills | 0.42 | < 0.01 |
| Discovery Skills | 0.10 | > 0.5 |

# Effect of Delivery Skills on Overall Grade



Personality P < 0.05
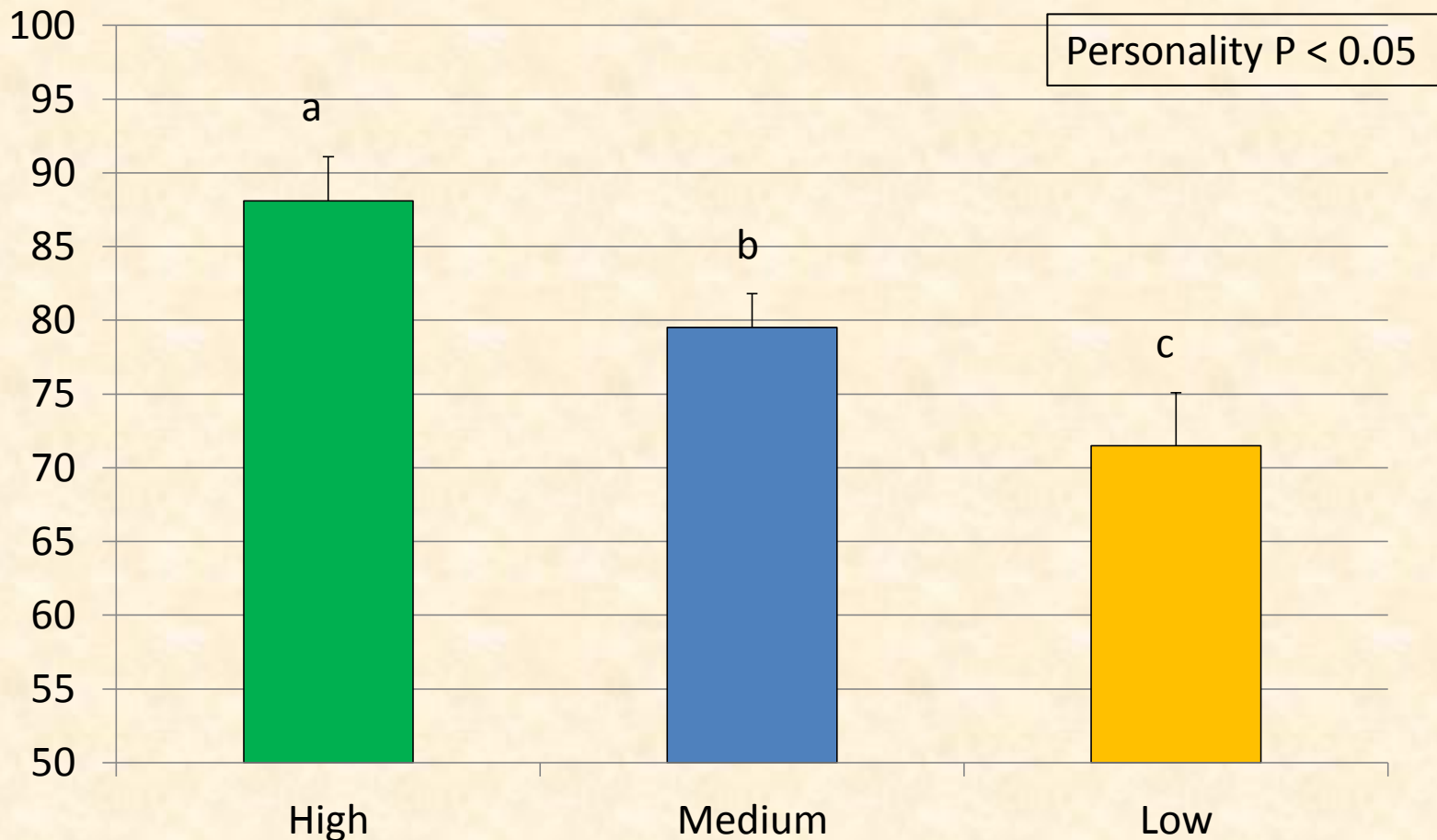
a,b,c Bars with different letter differ P ≤0.05

# Effect of Discovery skills on Overall Grade



Personality P < 0.05

a,b,c Bars with different letter differ P ≤0.05

# Results Summary

- **Students with high <span style="color:red">delivery skill</span> earned the highest grades.**

- **Discovery skills had no influence on exam scores in these two animal science courses.**

- **Delivery skills were positively correlated with overall exam scores (r = 0.4, P < 0.01), whereas discovery skills had very little correlation with exam scores.**

# Discussion/Implication

- **Students with high levels of Delivery skills tend to excel at planning, attention to detail, executing, and self-disciplined.**

- **If course content is structured for memorization and fact acquisition, then instructors are encouraged to help students develop Delivery skills.**

# Recommendations

- **Students with high levels of Discovery skills tend to engage in in questioning, observing, networking, and experimenting and associational thinking**

- **If course content requires exploration and innovation, then instructors should encourage Discovery skills and provide students with feedback on these skills course grades and assignments.**

# Conclusion

- Students skills, which can be modified, can be used as an indicator on how a student would perform [Rahim & Moen, 2015].

- The profile obtained can be used to ascertain weaknesses of different skill areas faced by students.

- What can instructor do to develop appropriate skills to improve students performance ?

  – Better understanding of student skills level

  – Additional exercises to improve specific skills

  – providing a supportive environment for remediation.

# Recommendations

- **Maybe it is more about the *student,* not just about the *strategy*?**

- **Role of skill indicators in a classroom?**

  – **Meet diverse needs.**

  – **Increase learning and performance.**

- **Replication of the study in course that require analysis, synthesis, and exploration.**

**"The fundamental aims of the teaching-learning environment is not so much about the tools, systems, and artifacts that captures so much of our attention and resources, but It is about the learning opportunities provided for our students . . . their engagement in the teaching-learning process, and their movement toward *competence, maturity, self-knowledge* and *cultural commitments.***" (Wildman,1997)