Relationship Between Graduate Student Status and Quality of Graduate Education

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2015 North American Colleges and Teachers of Agriculture Conference, Athens, GA
Introduction

- Increasingly competitive environment to offer quality educational experience
- Student satisfaction important to institutional success
- Key factors: quality education, better facilities, and adequate student support
- Attract new students and retain enrolled students
Part-Time Student Characteristics

- Different commitments: work, study, family etc.
- Tend to be older than full-time students
- Program completion time longer
- Minimal face-to-face contact

(Watts, 2008)
Significance of the Study

- Incorporates student status to assess educational quality and program satisfaction
- Offers some insight to part-time students’ perceived learning experience, collegiality in departments, and adequacy of support
Purpose & Hypotheses

**Purpose:**
Examine the relationship between graduate student status with quality of graduate education (their learning ability, collegiality in departments, and adequacy of student support).

**Hypotheses:**
No significant difference* between part-time and full-time graduate students’ perceived learning ability, collegiality in departments, adequacy of student support and satisfaction with program.

*Assumption: Equal Variance; \( H_0: \mu_{\text{Part-time}} = \mu_{\text{Full-time}} \)
# Learning Ability (14 Variables)
- Work-related Tasks
- Key Concepts
- Design Research
- Describe Disciplines
- Interpersonal Skills
- Mobilize Capacities
- Clear Writing
- Explain Ideas
- Interpret Knowledge
- Critique Ideas
- Propose Ideas
- Demonstrate Respect
- Ethical Principles
- Serve & Engage

# Collegiality in Departments (8 Variables)
- Common Goals Valued
- Respect Diversity
- Display Trust
- Listen Differing Opinions
- Celebrate Successes
- Care Other’s Welfare
- Respect Other’s Interests
- Assist One Another

# Student Support (5 Variables)
- Breadth of Curriculum
- Availability Course Offerings
- Faculty Advising
- Faculty Mentoring
- Access to Confidante

# Student Satisfaction (2 Variables)
- Likelihood of Student choosing Same Program
- Likelihood of Student Recommending same Programs to Others

## Survey Instrument
Methodology

PSU-CoAS Graduate Students (N=480)

Online Survey, Spring 2013

Validated & Reliability Tested

Cronbach’s α >.70

Learning Ability 14 Items

Collegiality 8 Items

Support 5 Items

Satisfaction 2 Items

Data Cleaned

No Difference Early vs. Late Respondents

Usable 42.71%

Unusable 12.29%

Not-Responded 45.00%

n=216

Responded 57.29%

Not-Responded 42.71%

n=275
Demographic Mosaic Plot

Gender

M.S.
M.P.S
M.Ed.
Ph.D.

Male

Female

Full Time
Part-time
Program Start Year
Part-Time & Full-Time Students

Part-time (n=40)

- 2013: 10%
- 2012: 17.5%
- 2011: 27.5%
- 2010: 25%
- 2009: 10%
- 2008: 2.5%
- 2007: 2.5%
- 2006: 5%

Full Time (n=161)

- 2013: 16.1%
- 2012: 25.5%
- 2011: 17.4%
- 2010: 18.0%
- 2009: 13.0%
- 2008: 6.8%
- 2007: 3.1%
Part-Time Graduate Students

n=42

Learning Ability: Mean 3.9, SD 0.7
Collegiality in Department: Mean 4.0, SD 0.8
Student Support: Mean 3.8, SD 0.9

Selecting Program: Mean 7.2, SD 3
Reco. Program: Mean 7.6, SD 2.9

Likert-type Scales; Range “1” Very Unlikely to “5” Very Likely
Scale-- Range “1” Very Unlikely to “10” Very Likely
Full-Time Graduate Students

n=174

Likert-type Scales; Range “1” SD to “5” SA

Scale-- Range “1” Very Unlikely to “10” Very Likely
Results: Part-Time vs. Full-Time

- No significant difference in learning ability \( (t = -0.59; p = 0.29) \)
- No significant difference in collegiality \( (t = 0.06; p = 0.14) \)
- Significant difference in student support \( (t = -0.14; p = 0.01) \)
- Significant difference in student satisfaction \( (t = -0.49; p = 0.07) \)
Faculty Advising ($t = -1.9, p = .031$)  Faculty Mentoring ($t = -2.25, p = .007$)
Conclusions

- Overall, students are satisfied with the quality of education and adequacy of support.
- Part-time students reported less adequacy of faculty advising and faculty mentoring.
- Part-time students less satisfied:
  - Can not perceive or enjoy opportunity fullest extent
  - Actual job requirement vs. course content
  - Huge opportunity cost (Maro-Egido & Panades, 2008)
Recommendations

- Improve student support in terms of faculty advising and faculty-mentoring
- Identify and address other support needs
- Emphasis on part-time students in program quality assessments
- Identify additional variables to indicate part-time student satisfaction
Thank you!

Question???
Predictors of Graduate Program Satisfaction: An Empirical Study

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2015 North American Colleges and Teachers of Agriculture Conference, Athens, GA
Introduction

- Students’ satisfaction is a sign of educational excellence and performance
- Important for recruiting and retaining students
- Assessment of quality and satisfaction: Crucial for graduate schools
- Implications for both educational institutions and students
- Educational quality and quality of support positively influence students’ satisfaction
Introduction

Determining factors for students’ level of satisfaction:

- Course Content
- Student Contact
- Learning Facilities
- Teaching Facilities
- Quality of Teaching

Garcial-Aracil, (2009)

- Perceptions on Learning
- Perceptions Teaching
- Support Facilities
- Learning Environment

Ilias, Hasan, Rahman, and Yasia (2008)

- Faculty-Student Relationship

Barrick, Easterly and Rieger (2011)
Significance of this Study

- Limited empirical evidence linking student learning ability, student support, collegiality and students’ satisfaction
- An attempt to identify factors to explain graduate students’ levels of satisfaction
Purpose & Objectives

**Purpose:** Examine the relationship between student satisfaction with graduate programs and their learning ability, collegiality in departments, and adequacy of student support

**Objectives:**
- Determine students’ learning ability, collegiality in departments, and adequacy of student support in CoAS
- Validate variables representing learning ability, collegiality, and student support
- Examine the relationship of graduate program satisfaction with learning ability, collegiality, and adequacy of support
Theoretical Framework

Wilkins and Melodena (2013)

“Student satisfaction is not determined solely by the students’ teaching and learning experiences, but rather by their overall experiences as a customer of a particular institution” (P. 45)

- Service Marketing Literature
  - Universities in the business of offering educational experience
  - Students as customers and higher education as service
  - Superiority or inferiority of quality of service: Determinant of Satisfaction
Hypotheses

\[ f(\text{Learning Ability}, \text{Collegiality}, \text{Student Support}) = \text{Satisfaction} \]

**Learning Ability (14 Variables)**
- Work-related Tasks
- Key Concepts
- Design Research
- Describe Disciplines
- Interpersonal Skills
- Mobilize Capacities
- Clear Writing
- Explain Ideas
- Interpret Knowledge
- Critique Ideas
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**Student Satisfaction (2 Variables)**
- Likelihood of Student choosing Same Program
- Likelihood of Student Recommending same Programs to Others
Descriptive Analysis

Factors Determining Satisfaction

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Ability</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Collegiality in Department</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Student Support</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Satisfaction Indicators

<table>
<thead>
<tr>
<th>Program</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selecting Program</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Reco. Program</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>

Likert-type Scales; Range “1” SD to “5” SA

Scale-- Range “1” Very Unlikely to “10” Very Likely
Inter-item Correlation Matrix

Learning Ability

Support

Collegiality
PCA & PAF

- Factor Analysis Suitability
  - Kaiser–Meyer–Olkin (.88)
  - Bartlett’s Test of Sphericity ($\chi^2$ test $p < .001$)
- Inter-item correlation coefficients ($r > .30$)
- Principal Component Analysis
- Factor Extraction
  - Principal Axis Factoring
  - Varimax Rotation
- Factor scores- Regression Method
Logistic Regression Design

Initial Dataset

\[ X_{1,1}, X_{1,2}, \ldots, X_{1,27}, \ldots, X_{220,1}, X_{220,2}, \ldots, X_{220,27} \]

Factor Scores

\[ F_{1,1}, F_{1,2}, F_{1,3}, F_{1,4}, \ldots, F_{220,1}, F_{220,2}, F_{220,3}, F_{220,4} \]

PAF

Student Satisfaction

\[ Y_i \sim Bin(N, \pi) \]

• Probability Predicted
• Estimated Probability Rounded & Models Accuracy Estimated

Less to Moderately

Highly Satisfied
# Predicting Student Choosing the Same Program

## Single Factor Models

<table>
<thead>
<tr>
<th>Factor</th>
<th>Model</th>
<th>Accuracy</th>
<th>Nagelkerke $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Ability</td>
<td>$\log(\pi/1-\pi) = .71^{**} + .49^* \text{ (Factor 1 Scores)}$</td>
<td>67.7%</td>
<td>.06</td>
</tr>
<tr>
<td>Collegiality</td>
<td>$\log(\pi/1-\pi) = .70^{**} + .38^* \text{ (Factor 2 Scores)}$</td>
<td>66.4%</td>
<td>.04</td>
</tr>
<tr>
<td>Faculty Support</td>
<td>$\log(\pi/1-\pi) = .76^{<strong>} + .86^{</strong>} \text{ (Factor 3 Scores)}$</td>
<td>72.7%</td>
<td>.17</td>
</tr>
<tr>
<td>Support Courses</td>
<td>$\log(\pi/1-\pi) = .70^{**} + .39^* \text{ (Factor 4 Scores)}$</td>
<td>67.3%</td>
<td>.04</td>
</tr>
</tbody>
</table>

## All Four Factors in Model

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE B</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>.810**</td>
<td>.165</td>
<td>2.249</td>
</tr>
<tr>
<td>Student learning</td>
<td>.529*</td>
<td>.183</td>
<td>1.698</td>
</tr>
<tr>
<td>Collegiality in department</td>
<td>.372*</td>
<td>.174</td>
<td>1.451</td>
</tr>
<tr>
<td>Support from faculty</td>
<td>.888**</td>
<td>.180</td>
<td>2.430</td>
</tr>
<tr>
<td>Support with courses</td>
<td>.473*</td>
<td>.182</td>
<td>1.604</td>
</tr>
</tbody>
</table>

Model Prediction Accuracy = 74.1% (95% CI: 0.678, 0.797); Nagelkerke R Square was .287

*p < .05, **p < .001
# Predicting Student Recommending the Same Program

## Single Factor Models

<table>
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<th>Model</th>
<th>Accuracy</th>
<th>Nagelkerke $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Ability</td>
<td>$\log(p/1-p) = 0.73^{**} + 0.48^* (\text{Factor 1 Scores})$</td>
<td>66.8%</td>
<td>0.06</td>
</tr>
<tr>
<td>Collegiality</td>
<td>$\log(p/1-p) = 0.73^{**} + 0.53^* (\text{Factor 2 Scores})$</td>
<td>65.9%</td>
<td>0.08</td>
</tr>
<tr>
<td>Faculty Support</td>
<td>$\log(p/1-p) = 0.77^{<strong>} + 0.81^{</strong>} (\text{Factor 3 Scores})$</td>
<td>70.5%</td>
<td>0.15</td>
</tr>
<tr>
<td>Support Courses</td>
<td>$\log(p/1-p) = 0.76^{<strong>} + 0.70^{</strong>} (\text{Factor 4 Scores})$</td>
<td>68.2%</td>
<td>0.12</td>
</tr>
</tbody>
</table>

## All Four Factors in Model

<table>
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<th>Variables</th>
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<th>SE B</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.907**</td>
<td>0.177</td>
<td>2.477</td>
</tr>
<tr>
<td>Student learning</td>
<td>0.553*</td>
<td>0.191</td>
<td>1.738</td>
</tr>
<tr>
<td>Collegiality in department</td>
<td>0.588*</td>
<td>0.184</td>
<td>1.801</td>
</tr>
<tr>
<td>Support from faculty</td>
<td>0.901**</td>
<td>0.188</td>
<td>2.463</td>
</tr>
<tr>
<td>Support with courses</td>
<td>0.884**</td>
<td>0.199</td>
<td>2.420</td>
</tr>
</tbody>
</table>

Model Prediction Accuracy = 77.3% (95% CI: 0.713, 0.826); Nagelkerke $R^2$ Square was 0.371

*$p < .05$, **$p < .001$
Conclusions

- Variables for student support, measured two distinct factors:
  1. course and curriculum and 2) faculty-student relationships
- Learning ability, collegiality, and support with course and curriculum and from faculty significant predictors
- Students in a collegial environment, with high learning ability and adequate student support both in terms of courses and curriculum and faculty support are more likely to be satisfied
Recommendations

- CoAS
  - constantly examine the breadth of curriculum
  - enhance support - faculty advising and mentoring
- Prioritize student support with respect to courses and curriculum
- Similar studies should be replicated in other agricultural colleges
- Future studies - to identify other aspects of student satisfaction (personal expectations and attitude)
Thank you!

Question???