Plug and Play: Developing a Flexible Program Assessment Model

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- **Contributors:** Robert McMaster, John Kellogg, Daniel Jones-White, & Andrew Merrill

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Outline: Today’s Presentation

• The Stakeholders
• The Framework
• Assessment Process/Plan “Actions”
• Test Case of Plug & Play Program Assessment
• Next Steps
The Stakeholders

- Students
- University Donors
- The Foundation
- Office of Undergraduate Education
- Scholarship & Collegiate advisor(s)/staff
- Planning & Analysis

Students

University of Minnesota
Driven to Discover
Students

• University goal: develop exceptional students
• Improve their experiences & outcomes
  – Affordability of the U
  – Programs are effective
  – Student based feedback is critical
• Creating a sense of community
Scholarship Liaison

• Works as liaison between the donor and students, scholarship and collegiate advisors
• Gather basic data on scholarship programs
Scholarship Advisor(s)

- Meet with, discuss goals, environment and program delivery as well as the “stories” of staff involved directly with scholarship program

- Benefits
  - Improved researcher access to students
  - Better understanding of program context and subtleties
Collegiate Advisor(s)

- Work directly with the students on meeting academic requirements, scheduling classes and navigating the University
- Provide a view of the environment from an academic perspective
Foundation/Donors

- Donor recruitment/management
- Undergraduate Scholarship programs
  - McGuire
  - Wallin
  - Benson
  - Larson
Office of Undergraduate Education

- Office served as a liaison between all Players
  - Foundation & Donors (presented findings & donor feedback)
  - Scholarship program staff
    - Access to students/contextual background
  - Office of Planning and Analysis (model development)
    - Central records, statistical analysis and focus groups
- Closed the loop
Planning and Analysis

- **OPA** – *Leadership and vision*
  - *Develop outcomes assessment framework*
  - *Develop and delivery summary report to Academic Affairs*

- **OIR** – *Quantitative: Descriptive and multivariate modeling, analysis & reporting*

- **OMS** – *Qualitative: focus groups, analysis & reporting*
General Assessment Framework

• Goals
  – Develop consistent, replicable process for assessment of scholarship programs & donor management*
  – Identify best practices in these programs [program evaluation]
• Utilize well-established, defined statistical model of student success
  – “plug and play” add program participation variable
  – Easily identify the “impact” of program participation
• Incorporate qualitative dimension
  – Provides flexibility & fill in “gaps” of model, strengthen and enrich analysis, broaden outcomes beyond model
University of Minnesota Scholarship Assessment Plan

Step 1

• Coordinate data collection and monitor semester by semester program participants
  – Have hired scholarship monitor (1 FTE)

Year 0: Start

– All students are coded in the system
– Initial survey of students (common Freshman survey)
– Several small focus groups at Welcome Week
– Selection of comparison set of students for longitudinal analysis
– Instruction with graduation and engagement planner
– Discuss creation of a formal student group
Step 2

Years 1-4: Quantitative

- Yearly standardized data analysis (for both scholarship students and comparison set)
  - Cumulative GPA
  - Credits completed
  - Major declared/completion
  - Progress towards degree
  - Liberal Education Requirement Status
  - Financial Aid Status and packaging
  - Retention
Step 2 cont.

Years 1-4: Qualitative

• Focus groups for scholarship students
  – Impact of financial Support,
  – Programmatic support,
  – Perceived benefits, and
  – Ideas for improvements

• Focus group for advisors
  – Specific concerns
  – College Transfer
  – Level of engagement/co-curricular activities
  – Reasons for nonretention (drop out, stop out, transfer)
Step 3

- Graduation
  - Exit interview/survey
  - Post graduation survey
  - Final fiscal analysis (debt load)
  - Assistance with creating an alumni group
Assessing Program Effects: Example

• In response to questions about how well students participating in the Scholars program performed academically, we utilized a mixed-methods approach.
  – Combining quantitative regression models on the relationships of program participation and student success with focus groups of the scholars that expanded model results and delved beyond the quantitative models.

• Questions:
  – Do scholarship program participants succeed at a higher level than similar students not in the program?
  – What were the perceived benefits of the program, the impacts of financial and programmatic support, and students’ ideas for improvements in the program?
## Outcomes

<table>
<thead>
<tr>
<th>Indicator of success</th>
<th>Scholars Program Participants</th>
<th>All Other Twin Cities Freshmen</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-year GPA</td>
<td>3.01</td>
<td>3.09</td>
<td>-0.08</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; year Retention</td>
<td>93%</td>
<td>88%</td>
<td>5%</td>
</tr>
</tbody>
</table>

N=148 Scholarship program participants, 2006 & 2007 First-time Entering Freshmen
Model

• Areas
  – Academic background/preparedness
  – First semester performance
  – Demographics
  – Geographic origin
  – Financial Aid
  – Social Integration
  – Control
## OLS & Logit Parameter Estimates: Academic Background

<table>
<thead>
<tr>
<th>Area</th>
<th>Predictor</th>
<th>OLS Model: First Year GPA</th>
<th>Logit Model: 1st Year Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Coef. Std. Beta SE Prob</td>
<td>Coef. SE Prob</td>
</tr>
<tr>
<td><strong>Academic Background</strong></td>
<td>ACT Composite</td>
<td>0.025 0.145 0.002 ▲</td>
<td>0.040 0.012 ▲</td>
</tr>
<tr>
<td></td>
<td>High School Rank</td>
<td>0.008 0.155 0.000 ▲</td>
<td>0.004 0.003</td>
</tr>
<tr>
<td></td>
<td>First Generation</td>
<td>-0.076 -0.052 0.012 ▼</td>
<td>-0.227 0.079 ▼</td>
</tr>
<tr>
<td></td>
<td>First Choice College</td>
<td>0.010 0.006 0.013</td>
<td>0.059 0.083</td>
</tr>
<tr>
<td></td>
<td>Advanced Placement Credits</td>
<td>0.005 0.067 0.001 ▲</td>
<td>0.026 0.006 ▲</td>
</tr>
<tr>
<td></td>
<td>Remedial Course Taken</td>
<td>0.102 0.016 0.049 △</td>
<td>0.882 0.314 △</td>
</tr>
</tbody>
</table>

▲ p < .001 ▲ p < .01 △ p < .05
## OLS & Logit Parameter Estimates: Academic Performance & Demographics

<table>
<thead>
<tr>
<th>Area</th>
<th>Predictor</th>
<th>OLS Model: First Year GPA</th>
<th>Logit Model: 1st Year Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>Std. Beta</td>
<td>SE</td>
</tr>
<tr>
<td><strong>First Semester Performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course Completion Ratio</td>
<td>0.023</td>
<td>0.566</td>
<td>0.000</td>
</tr>
<tr>
<td>C Count</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>D Count</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>

### Demographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Beta</th>
<th>SE</th>
<th>Prob</th>
<th>Coef.</th>
<th>SE</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.114</td>
<td>0.081</td>
<td>0.011</td>
<td>▲</td>
<td>-0.188</td>
<td>0.076</td>
<td>▼</td>
</tr>
<tr>
<td>19 Years or Older</td>
<td>0.039</td>
<td>0.020</td>
<td>0.015</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>-0.018</td>
<td>-0.009</td>
<td>0.017</td>
<td></td>
<td>0.720</td>
<td>0.124</td>
<td>▲</td>
</tr>
<tr>
<td>Underrepresented Minority</td>
<td>-0.058</td>
<td>-0.023</td>
<td>0.021</td>
<td>▼</td>
<td>0.311</td>
<td>0.133</td>
<td>△</td>
</tr>
</tbody>
</table>

▲ p < .001 ▲ ▼ p < .01 △ p < .05
## OLS & Logit Parameter Estimates: Geographic/Financial/Social & Cohort

<table>
<thead>
<tr>
<th>Area</th>
<th>Predictor</th>
<th>OLS Model: First Year GPA</th>
<th>Logit Model: 1&lt;sup&gt;st&lt;/sup&gt; Year Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Coef.</td>
<td>Std. Beta</td>
</tr>
<tr>
<td><strong>Geographic Origin</strong></td>
<td>Out-of-State</td>
<td>-0.039</td>
<td>-0.013</td>
</tr>
<tr>
<td></td>
<td>Reciprocity</td>
<td>-0.013</td>
<td>-0.008</td>
</tr>
<tr>
<td><strong>Financial Aid</strong></td>
<td>Scholarship Participant</td>
<td>0.127</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>Unmet Need</td>
<td>-0.004</td>
<td>0.001</td>
</tr>
<tr>
<td><strong>Social Integration</strong></td>
<td>On Campus Residence</td>
<td>0.054</td>
<td>0.039</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>2007 Cohort Year</td>
<td>-0.026</td>
<td>-0.019</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>-0.428</td>
<td></td>
</tr>
</tbody>
</table>

▲ p < .001 △ p < .01 △ p < .05
Qualitative Analysis

• Methodology
  – Systematic
  – Verifiable (bread crumbs)

• Question Development
  – Review of data that had been collected by OIR

• Main Priorities
  1. Impact of financial Support,
  2. Programmatic support,
  3. Perceived benefits, and
  4. Ideas for improvements

Introduction
Key Area
10-12 Questions Max
Results

• The analysis was then reviewed and summarized into a three page Executive Summary that was presented to the project team and the Dean of Undergraduate Education Bob McMaster.
Topic 1: Impact of Financial Support

- “I didn’t even think about the University of Minnesota as an option before. The financial part was huge for me…”

- “One thing that was really helpful was writing the thank you letter to the …… every year. It really helped motivate me to pursue what I want to do, and how my life is changing and what I’m doing”
Topic 2: Impact of Programmatic Support

Area: Advising
• “I expected no one to really care that much – in a big school you can get lost really easily. She knew you and got to know you personally […] she was like another mom, who was going to make sure you stayed on track and let you know when you were getting out of line”
• “I really like that they email scholarship opportunities […] there are a lot of resources within the email that we can look into”

Area: EDGE Week Experience
• “One thing that maybe jump-started it for all of us was having the week-long program before school started […] That’s sort of what jump started all of us getting involved in student groups and other things. It was an opportunity to meet people right away […] motivated me to get involved in student groups right away.”
Summary

• Plug & Play Assessment: fairly easy to do, with well developed model
  – Controlling known factors related to student success, isolate effect of program participation
  – Helps avoid common temptation to make hasty judgments based on zero-order “descriptive” findings
  – Incorporating both a quantitative & qualitative component broadens the assessment while providing a different perspective that some stakeholders prefer

• Results incorporated into an overall executive summary to VP
  – Utilized in meeting with Foundation and Donors
Future steps

- Fully Implement Assessment Plan
  - Identify control/comparative groups and identify selection factors used in scholarship programs
- Develop standard reporting template
- Vehicle for recruitment for future donors
Questions?

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