Non-cognitive Variables in Action: DePaul and Oregon State

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The Insight Resume

Six short-answer questions asked as part of admissions application:

• Leadership / group contributions
• Knowledge in a field / creativity
• Dealing with adversity
• Community service
• Handling systemic changes / discrimination
• Goals / task commitment
The Insight Resume

• Each question is scored from 1(low) to 3(high)
• Reading is done blind of all student information
• Scores and responses are used to inform some admission decisions
• Scores are used in general scholarship selection process
• Occasional “red flag” responses are addressed
2009 Analysis - Overview

• Measured correlation of IR scores to retention and graduation
• Looked at ability use models to accurately predict outcomes
• Looked at Fall 2004, 2005, 2006 and 2007 new freshmen cohorts
• Examined gender, ethnicity and Pell-status as variables
2009 Analysis - Results

Scores positively correlated with retention and graduation rates

• **2004 cohort**: One unit increase in IR score is associated with

  • Higher odds of retention (7%-15%), assuming all other characteristics the same
  • Higher odds of graduation (3%-11%), assuming all other characteristics the same
2009 Analysis - Results

Scores positively correlated with retention and graduation rates

• **2005 cohort:** African Americans and Native Americans showed increased odds of retention relative to other ethnicities with increase in IR score, assuming all other characteristics the same

• **2006 and 2007 cohorts:** “no evidence of an effect on retention due to IR scores”*
2009 Analysis - Conclusions

• “In no case does inclusion of IR scores offer substantive improvements in predictions.”
• “While some statistically significant effects are observed, these effects are small relative to the effects of other factors, especially GPA.”
Today’s Applicants: Who Gets Scored?

Admission Exceptions

Identify “Red Flags”

Scholarship Selection

Scored Twice

Scored Once

Scored Twice

3.00

3.75
The Future?

• Identifying deficiencies in non-cognitive areas and providing support and programming to build competencies
  • U-Engage courses
  • Early alert monitoring
  • Advisor flagging and training
  • Intentional linking to existing programs, services
  • Financial literacy (would require new question)
The Future?

• More data, more study
  • Impact of competency in individual attributes
  • Changes from 2009?
• Predictability of enrollment
• Test effectiveness of competency building programs (from previous slide)
Use of Non-cognitive Variables in Freshman Admission

Jon Boeckenstedt,
Associate Vice President

Division of Enrollment Management and Marketing
“Beyond The Usual” Appealed to Me...
First Principles: Definition

• “First principles, Clarice. Simplicity. Read Marcus Aurelius. Of each particular thing ask: What is it in itself? What is its nature?”

Hannibal Lecter, Silence of the Lambs
What is the Nature of Admissions?

• Gate Keeper?
• Labor Market Sorter?
• A “cog in one of the great inequality producing machines this country has known?”
• A Sales Job?
• Process to Identify/Predict/Reward Academic Success?
“When the number of factors coming into play in a phenomenological complex is too large, scientific method in most cases fails. One need only think of the weather, in which case the prediction even for a few days ahead is impossible.”

Nevertheless no one doubts that we are confronted with a causal connection whose causal components are in the main known to us.

Occurrences in this domain are beyond the reach of exact prediction because of the variety of factors in operation, not because of any lack of order in nature.”

Albert Einstein, *Science and Religion* (1941)
“...it is constantly supposed that there is a connexion between the present fact and that which is inferred from it”

David Hume

*Enquiries concerning Human Understanding* (1748)
How can we determine whether the atmosphere is unstable? The atmosphere is not a controlled experiment; if we disturb it and then observe what happens, we shall never know what would have happened if we did not disturb it. Any claim that we can learn what would have happened by referring to the weather forecast would imply that the question whose answer we seek has already been answered in the negative.

Edward Lorenz

Predictability: Does the Flap of a Butterfly's Wings in Brazil set off a Tornado in Texas? (1972)
“...sceptical doubts about the operations of the understanding,” not as “discouragement, but rather an incitement...to attempt something more full and satisfactory”
“A witty saying proves nothing.”

François-Marie Arouet, (Voltaire)
*Le Dîner du comte de Boulainvilliers* (1769)
The DIAMOND Project

• What it is:
  • Developing Insights for Admission through the Mining of Non-traditional Data

• How it fits with our Mission, Goals

• Consideration Factors

• How we have implemented it

• How it has evolved

• Preliminary Results
Context

Mission, Goals
DePaul considers first-generation, low-income, students of color, and students from Chicago to be an important component of its mission.

No pressure to raise profile, selectivity, or diversity.

In 2012, 2,498 of 9,406 Dependent Undergrads (26.5%) had EFC < Cost of This Conference.

Increasing applications meant that these students could eventually be squeezed out, despite research showing that they do very well at DePaul.

Reliance on traditional, often unquestioned, admissions approaches perpetuated the problem.
Admissions battles over CPS/IB candidates with low scores, excellent grades, despite research suggesting these students did well at DePaul

- Internal research suggesting standardized tests explained little of unique variance in FY grades
- More research suggesting progress toward degree was as important as FY GPA
- Concern about test score correlations (income, ethnicity)
ACT Scores: 8.5 million tests over 10 years
Standardized Test Scores Correlate with Income
Standardized Test Scores Correlate with Income
Standardized Test Scores Correlate with Income
First Generation Issues Also Creep In

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<th>Ethnicity</th>
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<th>Low Income</th>
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The DIAMOND Project Goals

• Explore and understand the importance of non-cognitive variables in student success and retention (the two are not necessarily the same)
• Attempt to build upon existing research to build questions to extract the characteristics deemed important
Even if We Had a Perfect Predictor of Y1 GPA:

Note: Student performance measured after three quarters of enrollment; DePaul is on quarter system, and 16 credits per term is standard.
Research Questions:

• Do non-cognitive variables help level the playing field?
• Do they help us identify students with characteristics important for college success that might not show up in a traditional college entrance exam?
• Do they deepen admissions staff members’ understandings of applicants as (more) complex, multi-dimensional?
Admissions Problems Tumblr

16TH OCT 2012 | 5 NOTES

WHEN AN APPLICANT HAS A 16 ON THE ACT

I CAN STILL SEE IT!
Implementing the DIAMOND Project

- Establishing the committee and leadership
- Developing and scoring the essays
- Building the web-based scoring and management tool
- Recruiting & training the readers
- Creating diagnostics to assess the process
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Fall 2006</td>
<td>SEM presentation by OSU and William Sedlacek on non-cognitive measures in admission</td>
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<td>Spring 2007</td>
<td>Informal working group formed</td>
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<td>Fall 2007</td>
<td>OSU &amp; Sedlacek visit DePaul; DIAMOND committee formed; Admission Leadership appointed</td>
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<td>Spring 2008</td>
<td>DIAMOND items and scoring rubric developed; Major systems development project initiated</td>
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<td>Fall 2008</td>
<td>Essays introduced for Fall 2009 applicants; Systems testing, Reader recruitment and training for 80 faculty/staff volunteer readers.</td>
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<td>Spring 2009</td>
<td>Scoring for “soft review” during admission for Fall 2009 class; diagnostic and preliminary data analysis begun</td>
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<td>Year</td>
<td>Event Description</td>
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<td>Fall 2009</td>
<td>Expand readers to include graduate students. Begin review for admissions for Fall 2010 class</td>
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<tr>
<td>Spring 2010</td>
<td>Revised requirement for DIAMOND essays for Fall 2010; Decision to adopt Common App for Fall 2011 applicants; Systems revisions. Readers selected and trained for 2010-2011 cycle</td>
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<td>Fall 2010</td>
<td>Decide to use DIAMOND for applicants deferred to Regular Admission only; Begin review for Fall 2011 freshman class;</td>
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<tr>
<td>Spring 2011</td>
<td>Decide to introduce Test-Optional Admission pilot for Fall 2012, with DIAMOND essays as required alternative; Readers selected and trained for 2011-2012 cycle</td>
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<td>Fall 2011</td>
<td>Readings begin for Test-Optional applicants and deferred applicants for Fall 2012</td>
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<tr>
<td>Fall 2012</td>
<td>First class with Test-optional Admits enrolled; Readings begin for Fall 2012-2013 cycle</td>
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The Basics

- Four essay questions (average 100 words) to measure eight dimensions of Sedlacek’s model. (Replaced two existing short essays in the current application.)
- Reader gives one score for each of the eight non-cognitive dimensions; sums to one overall score.
- Each set of essays read by two readers; where the difference of the scores is greater than 4, essays are read a third time.
Sample DIAMOND Questions

• Describe your **short and long term goals** and how you plan to accomplish them.

• Describe a **personal challenge** you have faced, or a situation which you found to be particularly difficult. How did you react and what conclusions did you draw from the experience?

• Discuss how **involved** you have been with your community through volunteer, neighborhood, place of worship, or other activities. Give examples of playing a **leadership** role in your school or community.

• Think about the **interests** you have pursued **outside of your high school classes**. Describe any knowledge or mastery of skills you have gained as a result.
Sample DIAMOND Scoring Rubric

Leadership Experience

• 3= Substantial behavioral evidence of taking initiative, assuming responsibility and consistent collaborative group participation over time; significant evidence of helping to resolve disputes

• 2= Some evidence of taking initiative, assuming responsibility and consistent collaborative group participation over time; some evidence of helping to resolve disputes;

• 1= Very limited or no evidence of taking initiative, assuming responsibility. No collaboration with or influence on others
Results So Far
Diamond Scores are Less Correlated with Income
DIAMOND Scores are Less Correlated with Income
DIAMOND Scores are Not Correlated with ACT
DIAMOND Scores are Not Correlated with ACT
• Lots of things are not correlated with standardized tests. That does not mean they are important in understanding student success.
I used to think correlation implied causation.

Then I took a statistics class. Now I don't.

Sounds like the class helped.

Well, maybe.
What about Students with Low ACT and High DIAMOND?
Students with higher than average DIAMOND scores have greater retention whether ACT is above or below average.

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Findings: DIAMOND and Student Success

- High school GPA is still the most significant factor for predicting first year success, by a considerable margin.
- There is evidence that higher DIAMOND scores help predict first year success, and, in some cases, retention for students with lower income, students of color, and students with lower ACT scores.
- Preliminary findings suggest that the DIAMOND scores can effectively bring additional information into the admissions review that is not statistically related to applicants’ socioeconomic and racial/ethnic background.
Preliminary Findings

• DIAMOND scores appear to help to provide a useful, more holistic assessment of the likelihood of student success, especially for:

  – Students with lower HSGPA
  – Minorities with lower HSGPA
  – Students with lower standardized test scores
  – Chicago Public School students
  – Students with lower HSSES Index
  – Male Pell Grant Recipients
• We believe this is important
• We’ll continue examining the results
• This is not the Silver Bullet
• When explaining and predicting human behavior, there is no Silver Bullet
• You can still believe in the power of the variable, while realizing that instruments to measure it might not be as robust as you’d like.