DATA MINING FOR COMPLETION

“PROJECT GRADUATION“
at
Bergen Community College
Having once been a leader, the USA now ranked 12th in the world.

In 2010 The Obama Administration charged the nation’s colleges with:
- Increasing the graduation rate to 50%
- Producing an additional 5 million graduates by 2020
BCC Profile

- Largest Community College in NJ, enrollment almost 17,000
- Serves the Tri-state area, educating students from multiple states, counties, cities & towns
- Over 90% of students receive financial aid
- Ranked 13th out of 19 State Community Colleges
- Graduation Rate: 14% as of 2011
August 2013:

- Launch “Project Graduation!”
- Assemble the Team
- Develop an Action Plan
4 Prong Approach

Graduation Promotion

Persistence & Progress Initiatives

Data Mining & Manual Auditing

Systems & Process Improvements

Graduate
Graduation Promotion

- Increase Advertisement Campaigns
  - Develop year round campaigns
  - Expand uses of social media & website

- Promote *Commencement* AND *Graduation*
  - Emphasize graduation BEFORE transfer
Persistence & Progress Initiatives

- Develop routine academic intervention initiatives
- Implement continuous graduation progress awareness initiatives
- Create tracking systems
Conduct business process review (BPR) of graduation practices

Analyze areas for improvement
  - Application process
  - Graduation deadlines
  - Diploma printing

Identify how automation and technology could be used to improve process
Data Mining & Manual Auditing

- Data mine to find eligible candidates
- Perform manual audits of student records
- Assist students with process and progress towards graduation
Extracted Records of students who:
- Completed a minimum of 60 college credits
- Had a GPA of 2.0 or higher
- Had NOT graduated

Categorized & Analyzed records

Applied Interventions

Graduated
### Data Mining

1878 records analyzed!

#### Categorized the Results

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Students no longer attending &amp; had completed all requirements</td>
</tr>
<tr>
<td>2.</td>
<td>Students no longer attending, potential graduates needing simple interventions for program completion</td>
</tr>
<tr>
<td>3.</td>
<td>Candidates, student enrolled in final semester of program completion</td>
</tr>
<tr>
<td>4.</td>
<td>Students no longer attending, not eligible to graduate, missing 1–3 courses for program completion</td>
</tr>
<tr>
<td>5.</td>
<td>Students no longer attending, not eligible to graduate, missing 4 or more courses for program completion</td>
</tr>
</tbody>
</table>
Data Mining

CATEGORY 1

Students no longer attending & had completed all requirements.

Total 235

Congratulated & Graduated!
Dear Student

Congratulations, you are eligible to graduate!

Your degree will be conferred, and your diploma will be mailed to you.

**NEXT STEPS:**

1. If you have any questions, please contact us on or before January 20, 2014 at CLCStudentservices@bergen.edu
2. Once you have graduated you record will be closed. If you return for additional courses a new record will be created for you.
3. Please visit the following websites for valuable transfer information related to graduation:
   - [http://www.njtransfer.org](http://www.njtransfer.org)

Save the date! You are invited to participate in your Commencement Ceremony at the IZOD Center in East Rutherford, NJ on May 22, 2014. Further information regarding this exciting ceremony will be sent to you.

On behalf of our college president, Dr. B. Kaye Walter, and the entire Bergen Community College family, congratulations on your achievement. We wish you continued success.

Sincerely,

Dr. Naydeen Gonzalez-De Jesus
Vice President of Student Affairs

CC: Dr. B. Kaye Walter, President
    Dean Denise Liguori, “Project Graduation” Committee Chair
Data Mining

CATEGORY 2
Students no longer attending, potential graduates, needing simple interventions for program completion.

Total 80

The “Project Graduation” team worked with students, academic deans and relevant departments.

Sample Interventions:

- Change of major
- Change of matriculation year to the most advantageous for student
- Course substitutions
Lost ... But Now Found!
Categories 1 & 2

- Eligible to Graduate
- Adjustment to Matriculation Year
- Course Substitutions
- Change of Major

- 235
- 36
- 35
- 9
Still Lost

Graduated
25

Still Lost
55
Data Mining

CATEGORY 3
Candidates, student enrolled in final semester of program completion. Total 398

- Extracted from the list as a control group
- Put through traditional process
Candidate Results
Students enrolled in their final semester - “Control Group” -

- Never Applied: 185
- Graduating: 213
Data Mining

CATEGORY 4
Students no longer attending, not eligible to graduate, missing 1-3 courses for program completion.

Total 1066

- Student Outreach to transfer credits back to complete Associates degree
- Student Outreach to re-enroll & complete degree at BCC
- Utilize Clearinghouse to ascertain if student had transferred
Mining Results 1 - 5

- Program Complete (235)
- Simple Interventions (80)
- Candidates (398)
- Missing 1-3 (1066)
- Missing 4+ (99)
Additional Findings & Analysis
## Hold Categories

<table>
<thead>
<tr>
<th>Hold</th>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBG</td>
<td>Bursar</td>
<td>11</td>
</tr>
<tr>
<td>HFA</td>
<td>Financial Aid</td>
<td>1</td>
</tr>
<tr>
<td>HPUB</td>
<td>Public Safety</td>
<td>1</td>
</tr>
<tr>
<td>HPE</td>
<td>Student Athlete</td>
<td>1</td>
</tr>
<tr>
<td>HNWF1</td>
<td>Visa</td>
<td>2</td>
</tr>
<tr>
<td>HJBRD</td>
<td>Judicial Board</td>
<td>1</td>
</tr>
<tr>
<td>HLIB</td>
<td>Library</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>
Students That Chose Not To Graduate

- Requested not to Graduate (3)
- Total Eligible to Graduated (658)

0.4% of the total eligible to graduated students requested not to graduate.
Graduation Numbers versus Rates

The Good News - Graduation Number

- Graduation numbers increased by 315 students no longer attending as a result of Data Mining Process
- Candidates, currently attending Spring semester but missed deadline, pool increased by 185 students

The Not So Good News - Graduation Rates

- 221 of the 315 graduates did not complete within the 3 year graduation rate cycle
- 85 of the 315 students completed their degree requirements within the 3 year rate cycle but were not discovered in time by mining process
- Only 9 of the 315 graduates can be counted to increase our graduation rates this year
Findings

Graduation rates unnecessarily depressed
Students transferred to 4 Year Schools before graduating
Application process caused 100s of students to not graduate
Manually driven & archaic business processes
Available technology not optimized
No strategic graduation outreach to students during academic career
“Opt-In” approach not working!
Decision

Change to an OPT-OUT Approach!
Decisions Made

- No applications!
- No graduation deadlines
- Students automatically graduated
- Mandatory continuous data mining
- Automated Outreach
Implementation

- Programming
- Promoting
- Processing
Student outreach and programming at:
- 32 credit completion level
- 48 credit completion level

Academic check-ups

‘Graduation Doctor’ Tables

Pop-up Graduation Stations

100 day Commencement Countdown ceremony
Promoting

- Redesigned website to include both Graduation & Commencement
- Displayed *Commit to Complete* imagery college wide
- Installed countdown clocks on all campuses
- Created Graduation mailbox for student communication and Q & A
Processing

- Created data mining cycle calendar
- Changed to in-house diploma printing process
- Implemented "Confirm My Graduation" electronic evaluation link in student portal
- Developed Operations Manual
Outcomes

- Changed culture
- Increased graduation numbers & rates
- Decreased delays
- Implemented greener, more cost efficient systems
- Improved data collection & record keeping abilities
- Increased Alumni Pool
BEFORE

Student Initiated Opt-in Process

- Student Opt-In by completing application
- Application returned within deadlines
- Graduation eligibility evaluated
- Eligibility Problems Identified
- Problems Identified Communication sent to Student
- Student Solves Problem
- Graduation
- Commencement

Denotes proven problem areas
AFTER
College Initiated Opt-out Process

College outreach at 32 credit completion

Commencement

Graduation

College outreach at 48 credit completion

College outreach at program completion

Congratulations Letter Sent
Student can Opt-out
Next Steps

• Create self-service, student portal, tracking systems
• Continue outreach, re-enrollment, transfer credit back endeavors with category 4 students
• Maintain routine data mining initiatives
• Establish a Graduation Office
Questions?

Dr. Naydeen Gonzalez-De Jesus  
Vice President of Student Affairs  
Ngonzalez-dejesus@bergen.edu  
Or  
dliguori@bergen.edu

Denise Liguori  
Dean of Student Affairs