Using Student Analytics to Provide State Reporting

Mike Glasser

Office of Institutional Research
University of Maryland – Baltimore County
Agenda

• Introduction
• Versioning
• Selection
• Custom Fields
• Data Cleaning
• Output
• Questions
Located in suburban Baltimore County, between Baltimore, MD and Washington, DC
One of the three public research campuses in the University of Maryland System
10K undergraduate and 2K graduate students
2,200 Employees; 715 full-time faculty
PeopleSoft, SQL Server 2008 R2
9 Pan-Am chess championships
“Official” Reporting

• Who
  – Federal (IPEDS)
  – Maryland Higher Education Commission (MHEC)
  – University System of Maryland (USM)
  – Campus

• What
  – Applications
  – Enrollments
  – Credit Hours / FTE
  – Degrees
Agenda

• Introduction
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Versioning

- Blackboard Analytics (BbA) methodology
- DimVersion
- “10th Day” Freeze
- Summer/Winter Admits
- Change Freeze Key
- Special Version
- Degrees
BbA Methodology

- Copy of “Current Snapshot”
- Administrative page
  - Select different Version
  - Future scheduling
<table>
<thead>
<tr>
<th>Versionkey</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>Unknown</td>
</tr>
<tr>
<td>1</td>
<td>Current Snapshot</td>
</tr>
<tr>
<td>3</td>
<td>End of Term Census</td>
</tr>
<tr>
<td>4</td>
<td>Begin Term Census</td>
</tr>
<tr>
<td>7</td>
<td>Day -5</td>
</tr>
<tr>
<td>8</td>
<td>Day 1</td>
</tr>
<tr>
<td>9</td>
<td>Day 5</td>
</tr>
<tr>
<td>10</td>
<td>Day 25</td>
</tr>
<tr>
<td>11</td>
<td>POTENTIAL Begin Term Census</td>
</tr>
<tr>
<td>13</td>
<td>End of Year Degree Census</td>
</tr>
<tr>
<td>14</td>
<td>Begin Special Term Census</td>
</tr>
<tr>
<td>15</td>
<td>Advanced Registration</td>
</tr>
</tbody>
</table>
“10th Day” Freeze

- “Begin Term Census”
  - Delivered
  - Official Freeze at end of schedule adjustment
  - Fall and Spring only

- “Potential Begin Term Census”
  - New VersionKey
  - Update to “Begin Term Census”
  - Avoids version availability until valid
Summer / Winter Admits

• Summer Admits
  – Treated as Fall admits
  – Frozen in Summer and Fall
  – Need to know both
  – Winter treated as Spring

• New field: Reporting Admit Term

<table>
<thead>
<tr>
<th>Key</th>
<th>Admit Term</th>
<th>Key</th>
<th>Rptg Admit Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Summer 2011</td>
<td>101</td>
<td>Fall 2011</td>
</tr>
<tr>
<td>101</td>
<td>Fall 2011</td>
<td>101</td>
<td>Fall 2011</td>
</tr>
</tbody>
</table>
Change Freeze Key

RptgAdmitTermKey  vs  TermKey

- HEA.SnapshotFinal procedure
  - Modified INSERT and DELETE statements
  - Fields based on Term being processed
  - FactApplications only
Special Version

- Freeze at end of Summer schedule adjustment
  - VersionKey 4, AdmitTerm Summer 2011
- Fall freeze includes Summer
  - VersionKey 4, AdmitTerm Summer 2011

- “Begin Special Term Census”
  - New VersionKey
  - Avoids duplicate TermKey in Version
Degrees

“End of Year Degree Census”

• Freeze degrees in August 2011
  – Summer 2010, Fall 2010, Spring 2011
• Manual freeze
  – copy Version 1 to 13 (New VersionKey)
  – DimTerm.Academic Year = ‘2011’
• FactDegreeAwards
  – One record per degree
• FactDegreePlans (New table)
  – One record per major per degree
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Selection of Official Records

New Dimensions

- Official Application
- Official Enrolled
- Official Subject
- Official Degree Plan
Official Application

• Exclude
  – Readmit/Reinstate
  – Continuing Education
  – Previously Enrolled at “Student Level”
  – Term Only
  – Intercampus

• One Record Per Student
  – Enrolled with application
  – Program Status (admit over applied)
  – Education Level (PhD over Masters)
Official Enrolled

• Include
  – Enrolled
  – Official Major
  – Primary StudentTerm (UG & Grad)

• Exclude
  – Continuing Education
  – Taking only Audit courses
  – Taking only “Place holder” courses
Official Subject

- Reporting Credit Hours and FTE
- Custom table of Subject attributes

- Excludes
  - “Place holder” courses
    - Study Abroad
    - Grad Assistant
    - Practicum
  - Intercampus
  - Remedial Subjects
Official Degree Plan

- New table: FactDegreePlans
- Include
  - Awarded
  - Valid HEGIS/CIP Code
  - Major/Certificate only
- Exclude
  - Previously Awarded
  - Secondary Plan for Graduate students
  - Duplicates
  - Mixed degree level
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Custom Fields

- GenderIPEDS
- Ethnicity / Multiple Ethnicities
- FTE
- App Enrolled Official
- App Student Level
- Degree Sought MHEC
- Other Custom Fields
GenderIPEDS

- Handling “Unknown” Gender
- Based on Student ID
- Even = “Male – Assigned” ……

<table>
<thead>
<tr>
<th>SourceKey</th>
<th>Description</th>
<th>AltDescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>Female</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>Male - Assigned</td>
</tr>
<tr>
<td>4</td>
<td>Female</td>
<td>Female - Assigned</td>
</tr>
</tbody>
</table>
Ethnicity

- DimEthnicity
  - DimStudent.CurrentEthnicity

- DimIPEDSEthnicity
  - DimStudent.CurrentEthnicity
  - DimStudent.CurrentCitizenship
  - Added EthnicityCodeIPEDS
  - Added EthnicURMCount
Multiple Ethnicities

Single Answer

• Helper table created
  – Single ethnicity per person
  – Source for CurrentEthnicity
• Any Hispanic = Hispanic
• More than one non-Hispanic = “Two or More”
• “MULTI” ethnicity created in load
Multiple Ethnicities

Multiple Answers

• DimEthnicities
  – New static dimension (128 combos)
  – Allows for multiple ethnicities
  – Indicator for each ethnicity

• SourceKey
  AMIND-ASIAN-BLACK-HISPA-NSPEC-PACIF-WHITE
  -ASIAN-BLACK-HISPA---
  ------WHITE
FTE

• Delivered
  – FactStudentTerm
  – 'FTE Divisor - Undergraduate‘ (12)
  – 'FTE Divisor - Non-Undergraduate‘ (9)

• Customization
  – FactRegistration
  – Course Level
  – Thesis course
  – Masters/Doctoral student
Is student officially enrolled in Fall/Spring with this Application?

- Trying to sync Applicant file indicating enrolled with the Enrollment file indicating new
- Case: UG applies for Grad, stays UG
- New field in FactApplications, but set in PreLoad FactStudentTerm
- Must be Officially Enrolled in Rptg Admit Term
- Admissions Application Number must match
App Student Level

- **Student Level**
  - Undergrad
  - Masters
  - Doctorate

- **Student Level New**
  - Previous Enrollment at Student Level

- **Student Level Status**
  - Report to State combination of two variables
Degree Sought MHEC

- State codes for degree objective
- Attribute associated with each Plan
- Dimension attributes
  - Current MHEC code
  - Code for Enrollment file Prior to 2009
  - Code for Degree file Prior to 2009
- Separate code for “Bachelors 2nd Major”
Other Custom Fields

- New Status Official
  - New/Continuing, Freshmen/Transfer
- First Time Status MHEC
- Geographic Origin Official
  - Time of application
  - County, State, International
- DimResidency.Residency MHEC
- Instruction Mode
- Room Scheduled By
Campus Reporting

Plan (Major) = “BIOL BS”

• Plan Objective
  – Bachelors

• Reporting Plan
  – “BIOL”
  – UG/Grad Indicators

• Plan Reporting Org
  – BIOL and MOCB to “Biological Sciences”

• Plan Reporting College
Plan Attributes

- Custom setup table
- Reporting Organization rollup
- Degree Sought MHEC
- Online Plan indicator
- Second Campus indicator
- Continuing Ed indicator
- STEM indicator
Slowly Changing Dimension

Plan Attributes History

- Reporting Org rollup changes over time
- Setup table has Begin and End Term
- DimPlanAttributes
  - Latest record for each Plan
  - Lookup by SourceKey
- DimPlanAttributesHistory
  - All records
  - Lookup by SourceKey AND Term between Begin and End Term
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Data Cleaning

- Clean it in the transaction system
  - Daily reports for Data Quality
- “Unknown” values (key = -1)
- Create fake records
  - Bad majors
  - “Two or More” Ethnicity
- New fields
  - GenderIPEDS
  - App Enrolled Official
Output

• Extract files to State
  – SAS
  – Selection using proper Version
  – Selection using “Official” fields

• Campus reports
  – Any reporting tool
  – Same selection criteria
  – Same fields
Recap

• Versioning
  – New Versions
  – Change selection key
  – Manual freezes

• Selection
  – “Official” indicators

• Custom Fields
  – PeopleSoft shortcomings
  – “State” requirements

• Current and Frozen data together
Wrap Up

Any Questions?

Mike Glasser
University of Maryland - Baltimore County
mglasser@umbc.edu (410) 455-3577

Source code is available upon request