Predictive Analytics Reporting (PAR) Framework: Current Status, Future Directions
• A “big data” analysis effort identify drivers related to loss and momentum and to inform student loss prevention

• WCET member institutions voluntarily contribute de-identified student records to create a single federated database.
• Common data definitions at the foundation of reusable predictive models and meaningful comparisons.

• Common data definitions openly published via a cc license

https://public.datacookbook.com/public/institutions/par
<table>
<thead>
<tr>
<th>Project Details:</th>
<th>Phase I</th>
<th>Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Partners</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Time Zones</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Data Concepts</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Data Variables</td>
<td>33</td>
<td>&gt;70</td>
</tr>
</tbody>
</table>

**Impacted by iData:**

<table>
<thead>
<tr>
<th></th>
<th>Phase I</th>
<th>Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man hours to organize</td>
<td>550</td>
<td>160</td>
</tr>
<tr>
<td>Weeks between draft and final</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Sharing mechanism</td>
<td>80 pps word</td>
<td>live Cookbook</td>
</tr>
</tbody>
</table>
This week, WCET announced that the Predictive Analytics Reporting Framework project data definitions are now to be offered under Creative Commons licensing. This move makes, for the first time, the data fields and definitions used by the WCET-managed PAR project public and openly available. CT asked Russ Little, who serves as project director for the student success plan at Sinclair Community College what this means not only for PAR member institutions like his, but for other community colleges and the higher education community in general.
In the beginning

- May 2011
- Funded by Bill & Melinda Gates Foundation ($1M)
- 6 institutional partners
  - 2 4 year schools
  - 2 community colleges
  - 2 for-profit institutions
- 3,200,000 course level records
- 640,000 student level records

- 2 In-kind donations
  - IBM
  - Tableau
Fast facts from Implementation

- Funded by Bill & Melinda Gates Foundation $2.6M
- Managed by WICHE Cooperative for Educational Technologies, operated by WCET core project team
- **16** institutional partners
  - 7 4 year schools
  - 5 community colleges
  - 4 for-profit institutions
- 12.5M course level records
- 1.7M student level records
- In-kind donations to date
  - Blackboard
  - iData
  - Starfish
Institutional Partners

American Public University System*
Ashford University
Broward College
Capella University
Colorado Community College System*
Lone Star College System
Penn State World Campus
Rio Salado College*
Sinclair Community College

Troy University
University of Central Florida
University of Hawaii System*
University of Illinois Springfield*
University of Maryland
University College
University of Phoenix*
Western Governors University
Making Data Matter in Education

- Gather the data
- Turn the data into information
- Use the information to help learners
Multi-institutional data

Institutional Data

College Data

Program Data

Classroom/Instructor Data

Student Data

LMS DATA

33 Variables and “common” definitions from POC

>70 variables and growing during implementation
What are the “Products”

- Validated Multi-Institutional Dataset
  - Reflective Report
  - Benchmark Reports
  - Aggregate Models
  - Institutional Models
  - Student Watch List

- Policy
- Local Intervention
- Comparative Interventions
• **Institutional Benchmarks**
• Student demographics
• Financial aid profiles
• Course size
• Student course completion/success
• Course success variations between online and face to face courses
• Program retention rate/pass rate
• Degree retention rate/pass rate
• Actionable Predictive Models
- Powerful tools for benchmarking student services and interventions - PAR Student Success Matrix (SSMX)

<table>
<thead>
<tr>
<th>PREDICTORS</th>
<th>CONNECTION</th>
<th>ENTRY</th>
<th>PROGRESS</th>
<th>COMPLETION</th>
</tr>
</thead>
<tbody>
<tr>
<td>learner characteristics</td>
<td>application to enrollment</td>
<td>completion of gatekeeper courses</td>
<td>entry into program to 75% of requirements complete</td>
<td>of course of study &amp; credential w/ market value</td>
</tr>
<tr>
<td>learner behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>academic integration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>social/psychological integration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other learner support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>course/program characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>instructor characteristics/behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Quantified intervention effectiveness

PAR Framework Intervention Tests – First phase

Institution 1
Basic PAR DATA

Institution 2
Basic PAR DATA

PAR MODELS Specifically targeted for interventions

SEND ALERTS TO STARFISH, SSP, etc.

Outcomes results

Similar Interventions across two campuses

Return results to PAR DB – compare against untreated group, other institution and model outcomes
$13,772  (Each dropout costs a college)

$13,977  (300 IR hours)

Source: Education Policy Institute - Feb 2013 Policy Perspectives

$95000  / 2,040 hours *
300 Hours
What we expect from project partners

- Participation of a senior academic officer
- Participation of a senior IT / IR staff member
- Participation of a senior level “student retention officer”
- A willingness to be part of an intact, high performing, cross functional, multi-institutional team.
- Commitment to two year’s participation
What you can expect from PAR

• Direct access to the members of the core data, product development and analysis teams that are directly engaged in the work of creating the PAR database.

• The opportunity to be a part of a one-of-a-kind predictive analytics project, conceptualized by and for educators.

• Actionable institutional insight including:
  – Cross-institutional performance benchmarks
  – Actionable institutional insight tools based on predictive models
  – Student Success Inventory tools
Reusable predictive models

Common Definitions of Risk

Common Definitions of interventions

Multi-Institutional collaboration

Student level watch lists for targeted interventions

Measurable results

Scalable cross-institutional improvements
THANKS for your interest

http://parframework.org
http://wcet.wiche.edu