Achieving the Dream
Data and Analytics Summit
Leveraging Analytics to Optimize Student Success
#ATDSAS16
Achieving the Dream

Data and Analytics Summit

#ATDSAS16
Building A Culture of Evidence and Inquiry Through Increasing Data Use

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President/CEO, Institute for Evidence-Based Change and Achieving the Dream, Data Coach

#ATDSAS16
AN EXERCISE

• Think about one piece of data that has made a difference in your life.

• What was that data?

• Sharing…
LEARNING EXPECTATIONS

• Discover what is meant by *Culture Change*
• Understand principles of good data use
• Understand practices of good data use
• Acquire some useful techniques to employ right away
CULTURE AND BEHAVIOR

• The kiss of death...saying you are trying to change culture
• Culture*: the beliefs, customs, arts, etc., of a particular society, group, place, or time
• Behavior*: the way a person or animal acts or behaves

* www.merriam-webster.com/dictionary
MOVING TO A CULTURE OF EVIDENCE: APPLYING THEORY TO PRACTICE

- Psychology
- Neuroscience
- Behavioral Economics

To Influence...

- Analytics
- Human judgment
- & decision-making
- Organizational habits

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ASSUMPTIONS ABOUT CULTURE OF EVIDENCE

Traditional Assumptions

- Staff are eager to engage in discussions about student performance
- Just knowing there is a problem is enough to make a change
- We know how to fix a certain type of problem
- Organizations can change practices and policies
- Staff are willing and eager to make improvements in student success

Reality

- The expression “pulling teeth” comes to mind
- There is often disagreement about the extent of a problem
- If we did, we would not be in this room
- Very difficult to do easily – often takes years (phase-in)
- Human nature is to keep things the same
DENIAL

Sorry, there are no french fries any more...

What?

ANGER

That's not possible! I just saw a guy walking out this shop with a bag full of french fries!

You better hand me your french fries or I'll kick your ass to the moon!

BARGAINING

Come on! I'm sure you have one or two left. Let's just say, I take what's left and I leave, ok?

DEPRESSION

I'll never taste the sweet flavor of french fries again... boooohoooo...

ACCEPTANCE

OK... can I have a hamburger then?
IEBC’S MODEL

Improved Student Success

Analytics

Human Judgment and Decision Making

Organizational Habits
IEBC’S MODEL

Improved Student Success

Analytics

Human Judgment and Decision Making

Organizational Habits

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### College Prep FTIC Students

<table>
<thead>
<tr>
<th>Milestone/Momentum Point/On-Track Indicator</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>2,557</td>
<td>2,719</td>
<td>3,102</td>
<td>3,159</td>
<td>3,185</td>
<td>3,268</td>
<td>3,237</td>
<td>3,448</td>
<td>3,409</td>
<td>3,588</td>
</tr>
<tr>
<td>Completed College Math Credits in First Two Years</td>
<td>16%</td>
<td>19%</td>
<td>22%</td>
<td>22%</td>
<td>24%</td>
<td>23%</td>
<td>27%</td>
<td>27%</td>
<td>27%</td>
<td>27%</td>
</tr>
<tr>
<td>Attempted 12 or More Credits in First Term</td>
<td>40%</td>
<td>45%</td>
<td>50%</td>
<td>49%</td>
<td>49%</td>
<td>48%</td>
<td>49%</td>
<td>47%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Earned 12 or More Credits in First Term</td>
<td>18%</td>
<td>19%</td>
<td>24%</td>
<td>21%</td>
<td>21%</td>
<td>26%</td>
<td>24%</td>
<td>26%</td>
<td>27%</td>
<td>28%</td>
</tr>
<tr>
<td>GPA of 3.5 or Greater in First Term</td>
<td>36%</td>
<td>35%</td>
<td>39%</td>
<td>40%</td>
<td>41%</td>
<td>42%</td>
<td>42%</td>
<td>42%</td>
<td>44%</td>
<td>47%</td>
</tr>
<tr>
<td>Completed College English Credits in First Two Years</td>
<td>34%</td>
<td>41%</td>
<td>47%</td>
<td>42%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>53%</td>
<td>57%</td>
<td>57%</td>
</tr>
<tr>
<td>GPA of 2.0 or Greater in First Year</td>
<td>41%</td>
<td>39%</td>
<td>44%</td>
<td>41%</td>
<td>40%</td>
<td>43%</td>
<td>42%</td>
<td>45%</td>
<td>45%</td>
<td>48%</td>
</tr>
<tr>
<td>No Withdrawals or Failures in First Year</td>
<td>41%</td>
<td>37%</td>
<td>38%</td>
<td>41%</td>
<td>39%</td>
<td>43%</td>
<td>42%</td>
<td>42%</td>
<td>42%</td>
<td>44%</td>
</tr>
<tr>
<td>Enrolled in First Year</td>
<td>44%</td>
<td>50%</td>
<td>56%</td>
<td>54%</td>
<td>51%</td>
<td>55%</td>
<td>56%</td>
<td>60%</td>
<td>63%</td>
<td>68%</td>
</tr>
<tr>
<td>Earned 12 or More Credits in First Year (Any-level)</td>
<td>19%</td>
<td>22%</td>
<td>27%</td>
<td>28%</td>
<td>28%</td>
<td>33%</td>
<td>35%</td>
<td>37%</td>
<td>37%</td>
<td>42%</td>
</tr>
<tr>
<td>Earned 30 or More Credits in First Year (Any level)</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>9%</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>Earned 30 or More College Credits in First Year</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Earned 20 or More Credits in First Year</td>
<td>24%</td>
<td>26%</td>
<td>29%</td>
<td>27%</td>
<td>27%</td>
<td>29%</td>
<td>32%</td>
<td>35%</td>
<td>37%</td>
<td>41%</td>
</tr>
<tr>
<td>GPA of 3.5 or Greater in First Year</td>
<td>12%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>9%</td>
<td>11%</td>
<td>9%</td>
<td>10%</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td>GPA of 2.5 or Greater in First Year</td>
<td>27%</td>
<td>26%</td>
<td>28%</td>
<td>28%</td>
<td>26%</td>
<td>30%</td>
<td>29%</td>
<td>33%</td>
<td>33%</td>
<td>35%</td>
</tr>
<tr>
<td>Earned at least 80% of Credits Attempted</td>
<td>42%</td>
<td>39%</td>
<td>44%</td>
<td>42%</td>
<td>41%</td>
<td>46%</td>
<td>45%</td>
<td>49%</td>
<td>49%</td>
<td>51%</td>
</tr>
<tr>
<td>Pell Award Recipient in First Year</td>
<td>28%</td>
<td>36%</td>
<td>37%</td>
<td>36%</td>
<td>35%</td>
<td>32%</td>
<td>32%</td>
<td>37%</td>
<td>42%</td>
<td>57%</td>
</tr>
<tr>
<td>Retained to Second Term</td>
<td>64%</td>
<td>70%</td>
<td>73%</td>
<td>71%</td>
<td>70%</td>
<td>72%</td>
<td>74%</td>
<td>76%</td>
<td>79%</td>
<td>82%</td>
</tr>
<tr>
<td>Retained to 2nd Year</td>
<td>64%</td>
<td>50%</td>
<td>53%</td>
<td>54%</td>
<td>52%</td>
<td>52%</td>
<td>57%</td>
<td>58%</td>
<td>62%</td>
<td>62%</td>
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<tr>
<td>Enrolled in First Summer</td>
<td>29%</td>
<td>33%</td>
<td>35%</td>
<td>34%</td>
<td>33%</td>
<td>31%</td>
<td>34%</td>
<td>36%</td>
<td>36%</td>
<td>41%</td>
</tr>
<tr>
<td>Enrolled in Second Summer</td>
<td>22%</td>
<td>26%</td>
<td>27%</td>
<td>27%</td>
<td>24%</td>
<td>25%</td>
<td>30%</td>
<td>30%</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>No Delay in Enrollment</td>
<td>50%</td>
<td>63%</td>
<td>66%</td>
<td>68%</td>
<td>72%</td>
<td>76%</td>
<td>78%</td>
<td>78%</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Underrepresented Race or Ethnicity</td>
<td>56%</td>
<td>59%</td>
<td>58%</td>
<td>61%</td>
<td>65%</td>
<td>69%</td>
<td>69%</td>
<td>70%</td>
<td>70%</td>
<td>75%</td>
</tr>
<tr>
<td>Foreign Born</td>
<td>29%</td>
<td>28%</td>
<td>28%</td>
<td>29%</td>
<td>28%</td>
<td>29%</td>
<td>28%</td>
<td>28%</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>First Generation in College</td>
<td>37%</td>
<td>38%</td>
<td>42%</td>
<td>38%</td>
<td>37%</td>
<td>38%</td>
<td>37%</td>
<td>38%</td>
<td>42%</td>
<td>42%</td>
</tr>
<tr>
<td>Average number of terms enrolled in First Year</td>
<td>1.9</td>
<td>2.0</td>
<td>2.1</td>
<td>2.0</td>
<td>2.0</td>
<td>2.1</td>
<td>2.1</td>
<td>2.2</td>
<td>2.2</td>
<td>2.3</td>
</tr>
<tr>
<td>Age 25 or older at start</td>
<td>23%</td>
<td>21%</td>
<td>20%</td>
<td>16%</td>
<td>15%</td>
<td>13%</td>
<td>12%</td>
<td>9%</td>
<td>9%</td>
<td>12%</td>
</tr>
</tbody>
</table>
USELESS STATISTICS – BUT WE CAN’T SEEM TO LOOK AWAY...

• Qatar has the lowest death rate in the world at 1.6 deaths for every 1,000 persons.
• Couples who marry in January, February and March tend to have the highest divorce rates.
• On average, 100 people choke to death on ballpoint pens every year.
• In the United States, at any given moment, there are over two million impaired drivers on the road.
• Right-handed people live, on average; nine years longer than left handed people.
• Count the number of cricket chirps in a 15-second period, add 37 to the total, and your result will be very close to the actual outdoor Fahrenheit temperature.

Beyond mandated reporting, only report data if it needed to inform a decision
WHERE IS THE STORY?

- Statistics do not matter…it is the story behind the numbers that matter
LEADING AND LAGGING INDICATORS

• Borrowed from the fields of economics and business

• Leading indicators are in your control and lead to your hoped-for success

• Lagging indicators are affected by what you do to influence your leading indicators

• What is leading and what is lagging depends on where you stand
IEBC’S MODEL

Improved Student Success

Analytics

Human Judgment and Decision Making

Organizational Habits

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TYPICAL DATA

Student Data:
- Enrollment rates
- Retention rates
- Course success rates
- Overall course success
- Persistence rates
- Credit milestone attainment
- Completion of develop. ed
- Graduation rates
- Transfer rates

Data Disaggregated by:
- Race/ethnicity
- Gender
- Pell recipient (ever)
- Entering cohort year
- Age

Exercise: What data do you have the power to influence?
A QUICK TEST

Here is a simple puzzle. Do not try to solve it but listen to your intuition:

A bat and ball cost $1.10. The bat costs one dollar more than the ball. How much does the ball cost?
A QUICK TEST

10¢

The point of this easy puzzle is that it evokes an answer that is intuitive, appealing
A QUICK TEST

The point of this easy puzzle is that it evokes an answer that is intuitive, appealing and wrong.
The point of this easy puzzle is that it evokes an answer that is intuitive, appealing, and wrong.

If the ball costs 10¢, then the total cost will be $1.20 (10¢ for the ball and $1.10 for the bat), not $1.10. The correct answer is 5¢.
HUMAN JUDGMENT & DECISION MAKING

- Data must be easy to understand
- Messages need to be explicit - What do you want them to take away?
- Chart Title…
### Chemistry Enrollment by Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>African American</td>
<td>15%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>16%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>22%</td>
<td>20%</td>
<td>23%</td>
</tr>
<tr>
<td>Asian</td>
<td>26%</td>
<td>19%</td>
<td>26%</td>
</tr>
</tbody>
</table>
Hispanic Female Chemistry Enrollment Has Increased

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15%</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td>Female</td>
<td>18%</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16%</td>
<td>16%</td>
<td>17%</td>
</tr>
<tr>
<td>Female</td>
<td>15%</td>
<td>19%</td>
<td>23%</td>
</tr>
<tr>
<td>Caucasian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>22%</td>
<td>25%</td>
<td>23%</td>
</tr>
<tr>
<td>Female</td>
<td>20%</td>
<td>19%</td>
<td>19%</td>
</tr>
<tr>
<td>Asian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26%</td>
<td>24%</td>
<td>26%</td>
</tr>
<tr>
<td>Female</td>
<td>19%</td>
<td>22%</td>
<td>21%</td>
</tr>
</tbody>
</table>
THE POWER OF ONE
IEBC’S MODEL

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New Improved Pepsodent Removes FILM Amazingly!

In just 7 days—see a wonderful difference in the brightness of your teeth and the freshness of your breath—as we'll give you DOUBLE YOUR MONEY BACK!

Why FILM must be removed
1. FILM reflects stains that make teeth look dull
2. FILM harbors germs that breed bad breath
3. FILM glues acid to your teeth
4. FILM never lets up—it forces constantly on everyone's teeth

Now Faster Foaming! New Pepsodent Sweeps FILM Away!

The New Pepsodent jar is not only a change in your mouth, but your mouth. Pepsodent has a marvelous new propellant—flowing air! When you squeeze the handle, air is sent rushing in. How is it that air can remove Film from your teeth? It's because Film is a film! Pepsodent is not a new mouthwash. It is a new toothpaste. It's a quick, sure, vivid way to make your mouth lick its lips. Pepsodent is the next step in film removal. It's a quick, sure, vivid way to make your mouth lick its lips. Pepsodent is the next step in film removal. It's a quick, sure, vivid way to make your mouth lick its lips.
WHAT IS A HABIT?

- The Easter ham
- Emerge gradually
- Causes us to act without conscious thought
  - Drilling: Lock that in…but the 21 day rule is not true
- Difficult to change – need help
- Keystone habits – lead to good habits

What are some of your organization’s habits around data?
CHANGING HABITS: WHAT ARE OTHER COLLEGES DOING?

• Odessa College
  – Reviewed data on what they can control – leading indicators
  – Course retention
• San Jacinto College
  – Data on course success
  – “Just one more” campaign
time for questions