

# The Value of Running on a Longitudinal Data Structure

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# Agenda

- Motivation
- Implementation
- Outcome
- Application
- Considerations
- Aspirations

# Motivation

- Disparate transactional systems, CSVs and/or Excel
  - Lack of data direction
  - Time cost in data compilation from multiple sources

# Motivation

- Inconsistent data structure and quality
  - Frequently recreating reports
  - Unreliable key matching
  - Lack of consistent field values

# Motivation

- Instability in data sources and reporting over time
  - Transactional system change destroys longitudinal reporting capability
  - Report recreation in the transactional systems

# Implementation

- 1998 – RFP for data warehouse
- 1999 – Implement Complete Data Warehouse (CDW) from eScholar
- 2000 – Data Warehouse goes live
- 2000+ – Expanded data and reporting capabilities

# Outcome

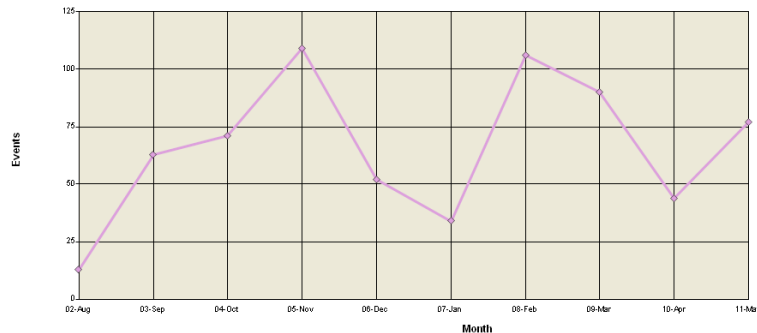
- Common data structure
- Common reporting platform
- Facilitated data cleanup through standardized ETL (Extract, Transform, Load) plans
- Longitudinal data despite 4 different Student Information Systems

# Application (School Reporting)

- Centralized location for demographic, attendance, discipline, and assessment data

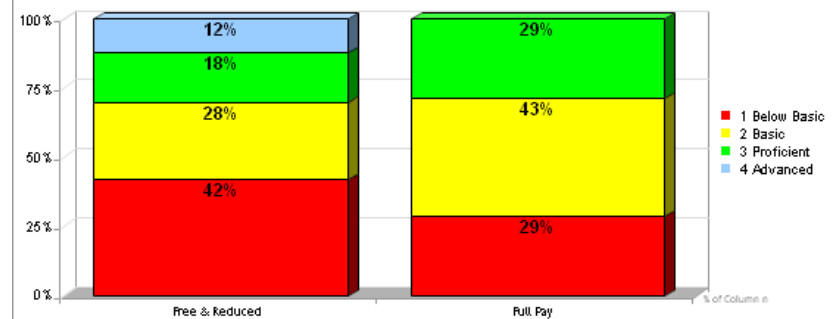
|   |                                   |  |   |                  |   |   |  |  |                                       |
|---|-----------------------------------|--|---|------------------|---|---|--|--|---------------------------------------|
| <b>School Year*</b><br><-- Select Year(s) --<br>2013-14<br>2014-15<br>2015-16<br>2016-17<br>2017-18 | <b>School</b><br>Adams<br>Process | <b>Frequency</b><br><input checked="" type="radio"/> Term<br><input type="radio"/> Month<br><input type="radio"/> Week | <b>Limit Events By:</b><br><input checked="" type="radio"/> All<br><input type="radio"/> Referred By<br><input type="radio"/> Violation<br><input type="radio"/> Zone | <b>Limit To*</b> | <b>Race Limit*</b><br><-- All --><br>African American<br>Asian<br>Caucasian<br>Hispanic<br>Multi Racial | <b>SES Limit*</b><br><-- All --><br>1<br>2<br>3 | <b>Sex Limit*</b><br><-- All --><br>Female<br>Male | <b>Class*</b><br><-- All --><br>01<br>02<br>03<br>04<br>05 | <b>Special Ed</b><br>All<br>Yes<br>No |
|---|-----------------------------------|--|---|------------------|---|---|--|--|---------------------------------------|

2015-16 Discipline\* Events by Month for Miami



\* Does not include Attendance violations.

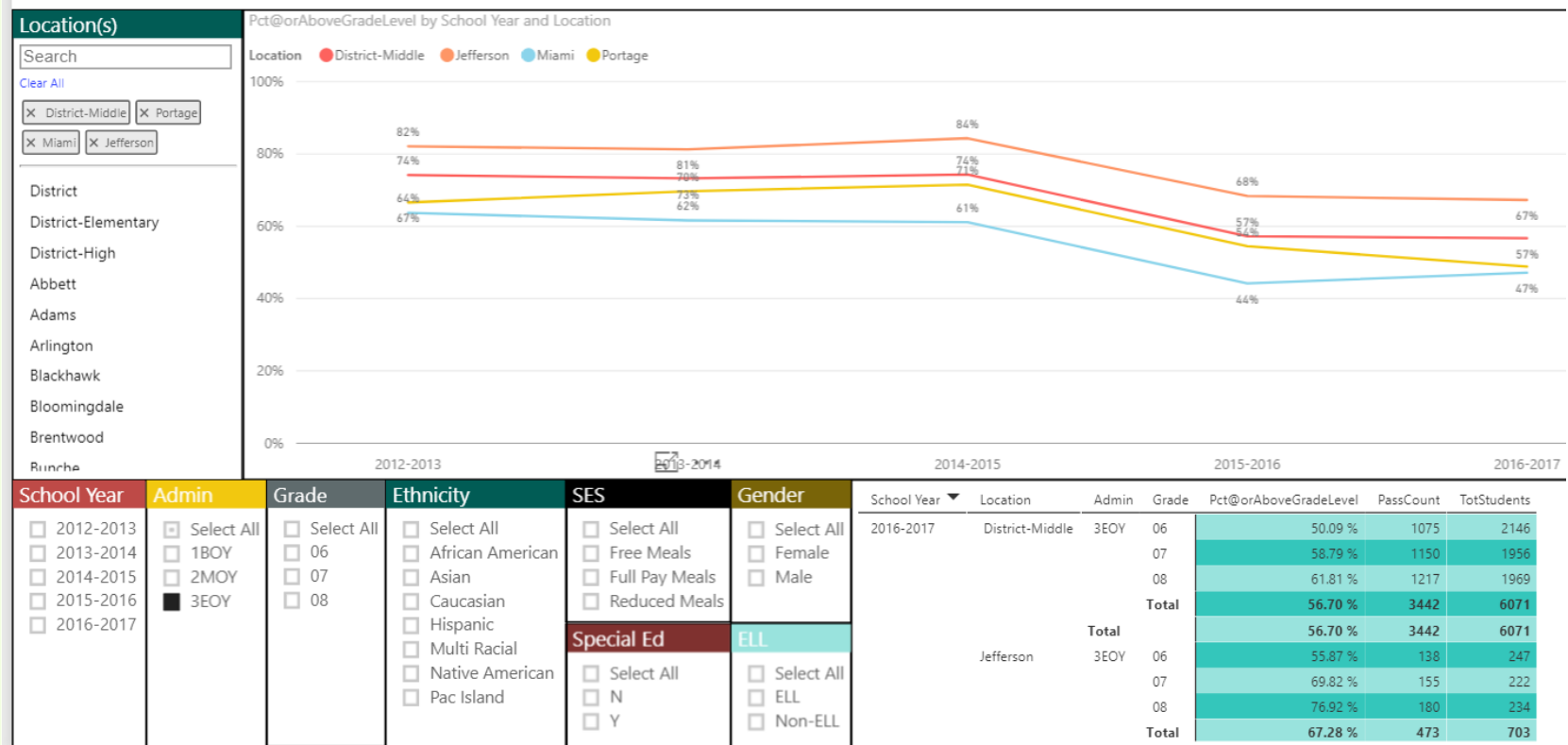
SRI Results - SES





# Application (School Reporting)

- Allows for comparisons across years/transactional systems

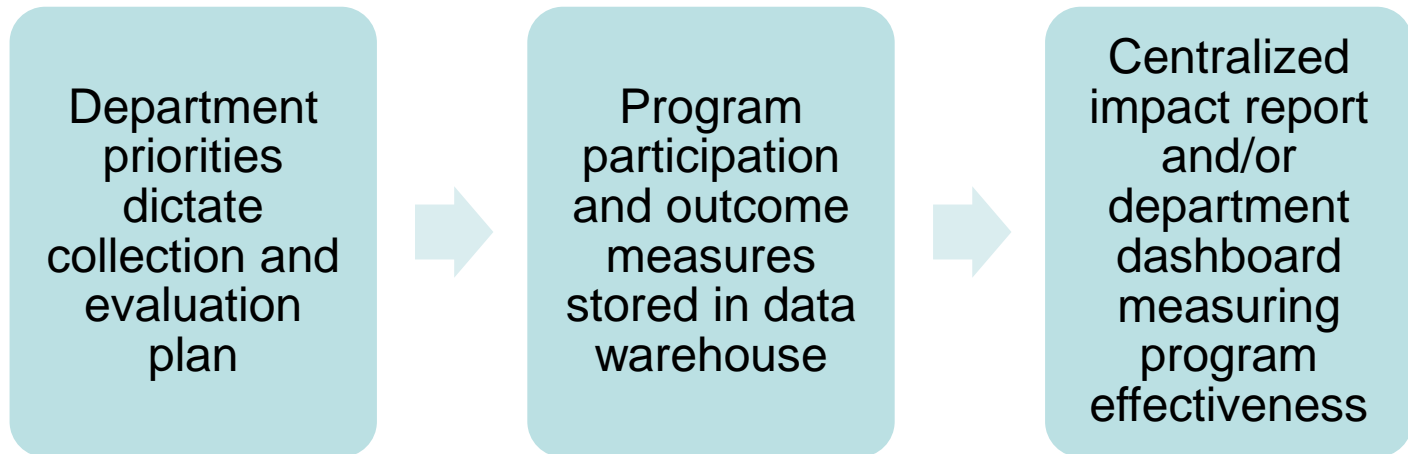


# Application (Evaluative Reporting)

## ***Traditional FWCS Evaluation***



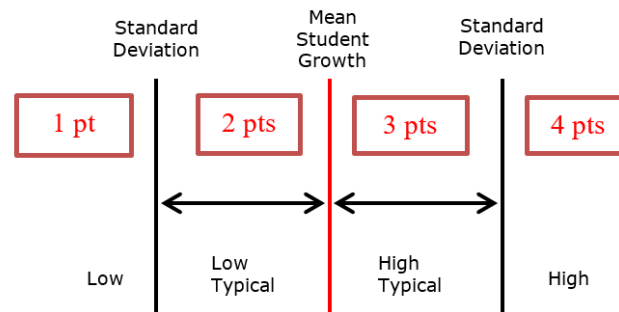
## ***Program Evaluation with a Longitudinal Data System***



# Application (Evaluative Reporting)

- Teacher Evaluation System

- Longitudinal data system serves as host for initial student-teacher linkage
- Historical assessment data leads to growth band creation for formative literacy assessments



- District created growth measures are used for teachers in non-tested subject areas

# Application (Predictive Analysis)

- Allows administrators ready export of student-level data

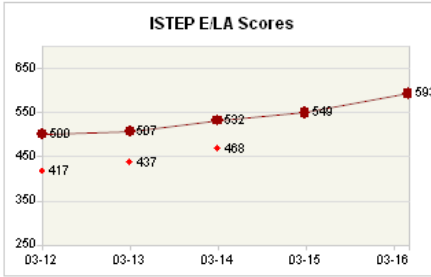
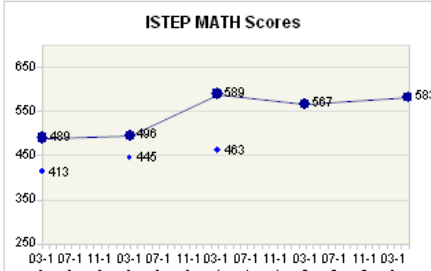
**Student History** [Print All Details](#)

Student Lookup Enrollment Attendance Discipline Grades Assessment Tests **ISTEP/LAS Links Scores**

School: Towles, Grade: 08 [Print](#)

**ISTEP Test Results** *ISTEP records go back to 1999-00 school year.*

| Test Date | Current Grade | Test   | Ela     | Ela Code | Math    | Math Code |
|-----------|---------------|--------|---------|----------|---------|-----------|
| 03-05-12  | 03            | Spring | 500/417 | A        | 489/413 | A         |
| 03-04-13  | 04            | Spring | 507/437 | A        | 496/445 | A         |
| 03-03-14  | 05            | Spring | 532/468 | A        | 589/463 | P         |
| 03-02-15  | 06            | Spring | 549     | A        | 567     | P         |
| 05-05-16  | 07            | Spring | 593     | P        | 583     | P         |

**Other Assessments (ECA, IREAD)**

| School Year | Assessment | Content Area | Item Name | Grade Level | Indicator | Score |
|-------------|------------|--------------|-----------|-------------|-----------|-------|
|             |            |              |           |             |           |       |

Indicators  
P - Pass Plus  
A - Above  
B - Below

[Print All Details](#)

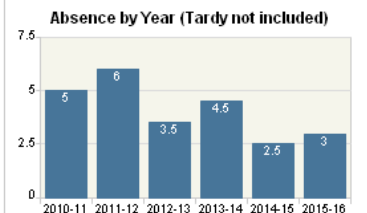
Grades Assessment Tests **ISTEP/LAS Links Scores** [Print](#)

*1999 school year.*

**Attendance Summary \***

| Year    | Grade | Type | Abs-E | Exc | Tar |
|---------|-------|------|-------|-----|-----|
| 2010-11 | 02    |      | 5.0   |     |     |
| 2011-12 | 03    |      | 2.0   | 4.0 | 7.0 |
| 2012-13 | 04    |      | 2.5   | 1.0 | 1.0 |
| 2013-14 | 05    |      | 4.5   |     | 1.0 |
| 2014-15 | 06    |      | 2.5   |     |     |
| 2015-16 | 07    |      | 3.0   |     | 1.0 |

**Absence by Year (Tardy not included)**



\* Prior to 2011-12 school year, tardy count is a number of tardy days. 2011-12 and later, tardy count is total number of times tardy.

# Application (Predictive Analysis)

|    | A             | B              | C                 | D                  | E     | G                         | I                | J                 | K   |
|----|---------------|----------------|-------------------|--------------------|-------|---------------------------|------------------|-------------------|---|
| 1  | School Name   | Student Number | Student Last Name | Student First Name | Grade | English Proficiency Level | ELA Total Points | Math Total Points | Selected for Intervention X-ELA or X-Math |
| 2  | Portage       |                |                   |                    | 8     |                           | 4                | 9                 |   |
| 3  | Lane          |                |                   |                    | 8     |                           | 0                | 6                 |   |
| 4  | Shawnee       |                |                   |                    | 8     |                           | 6                | 9                 |   |
| 5  | Jefferson     |                |                   |                    | 6     |                           | 10               | 3                 |   |
| 6  | Jefferson     |                |                   |                    | 6     |                           | 4                | 0                 |   |
| 7  | Lakeside      |                |                   |                    | 7     |                           | 8                | 9                 |   |
| 8  | Kekionga      |                |                   |                    | 6     |                           | 0                | 6                 |   |
| 9  | Memorial Park |                |                   |                    | 7     |                           | 6                | 9                 |   |
| 10 | Northwood     |                |                   |                    | 8     |                           | 6                | 3                 |   |
| 11 | Northwood     |                |                   |                    | 6     |                           | 8                | 0                 |   |
| 12 | Shawnee       |                |                   |                    | 6     |                           | 4                | 3                 |   |
| 13 | Lane          |                |                   |                    | 8     | FNA                       | 2                | 6                 |   |
| 14 | Miami         |                |                   |                    | 6     |                           | 2                | 3                 |   |
| 15 | Miami         |                |                   |                    | 6     |                           | 0                | 0                 |   |
| 16 | Miami         |                |                   |                    | 6     |                           | 0                | 0                 |   |

# Considerations

- Potential for overabundance of reports and reporting platforms (transactional and data warehouse)
  - Report identification, organization and management
  - Customizable Data Security
- Process and implementation needs to be supported from top-down
- Data Extraction and Data Analysis expertise

# Aspirations

- Data modeling
- Business Intelligence (SSAS)
- Enhance data analysis
- Unified dashboard (report management)
- Power User access to clean, pre-joined data sets
- Row-level security

# Questions