



Business School  
UNIVERSITY OF COLORADO DENVER

Information Systems Program

# Module 1

## DBMS Extensions and Example Data Warehouses

### Lesson 5: Colorado Education Data Warehouse



# Lesson Objectives

- Understand the scope of moderate size data warehouses
- Grasp development difficulties
- Reflect about mandatory participation by data providers and wide usage by stakeholders

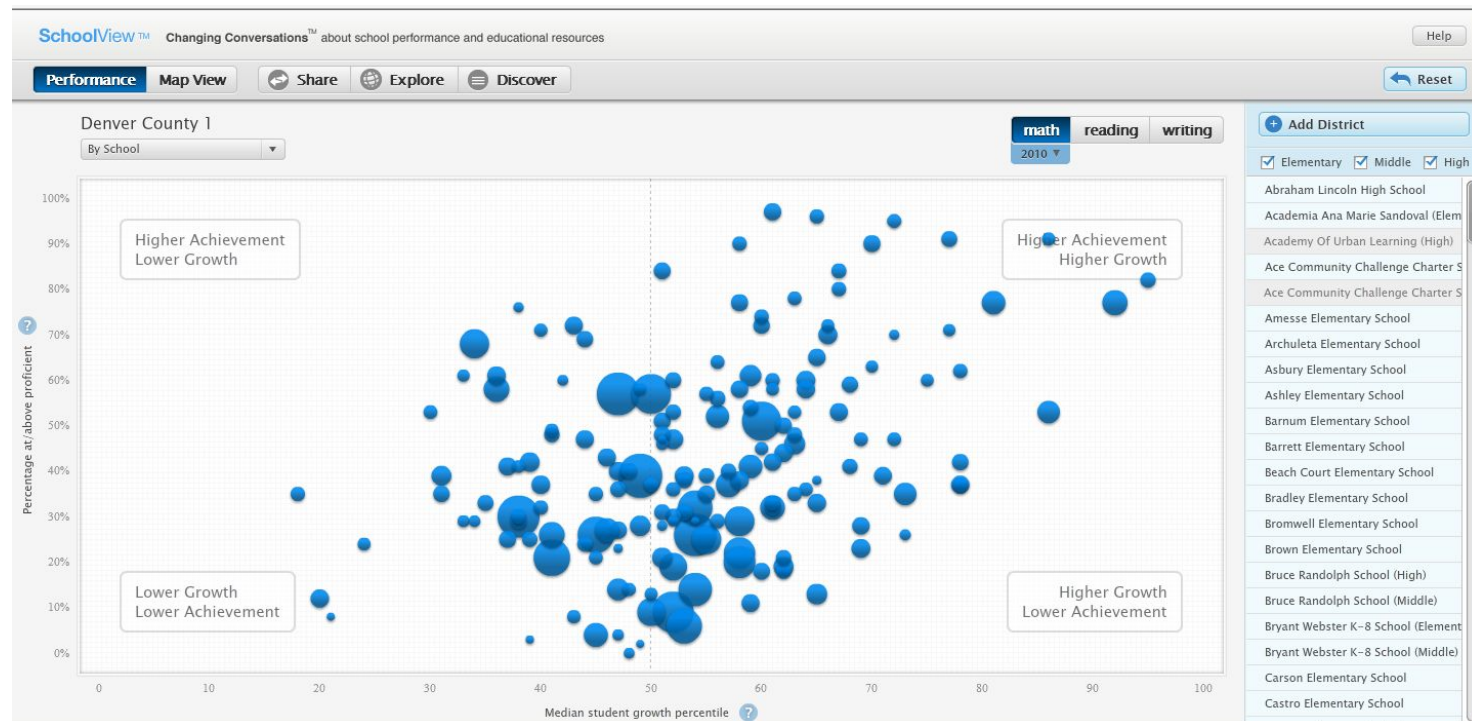


# Development Timeline

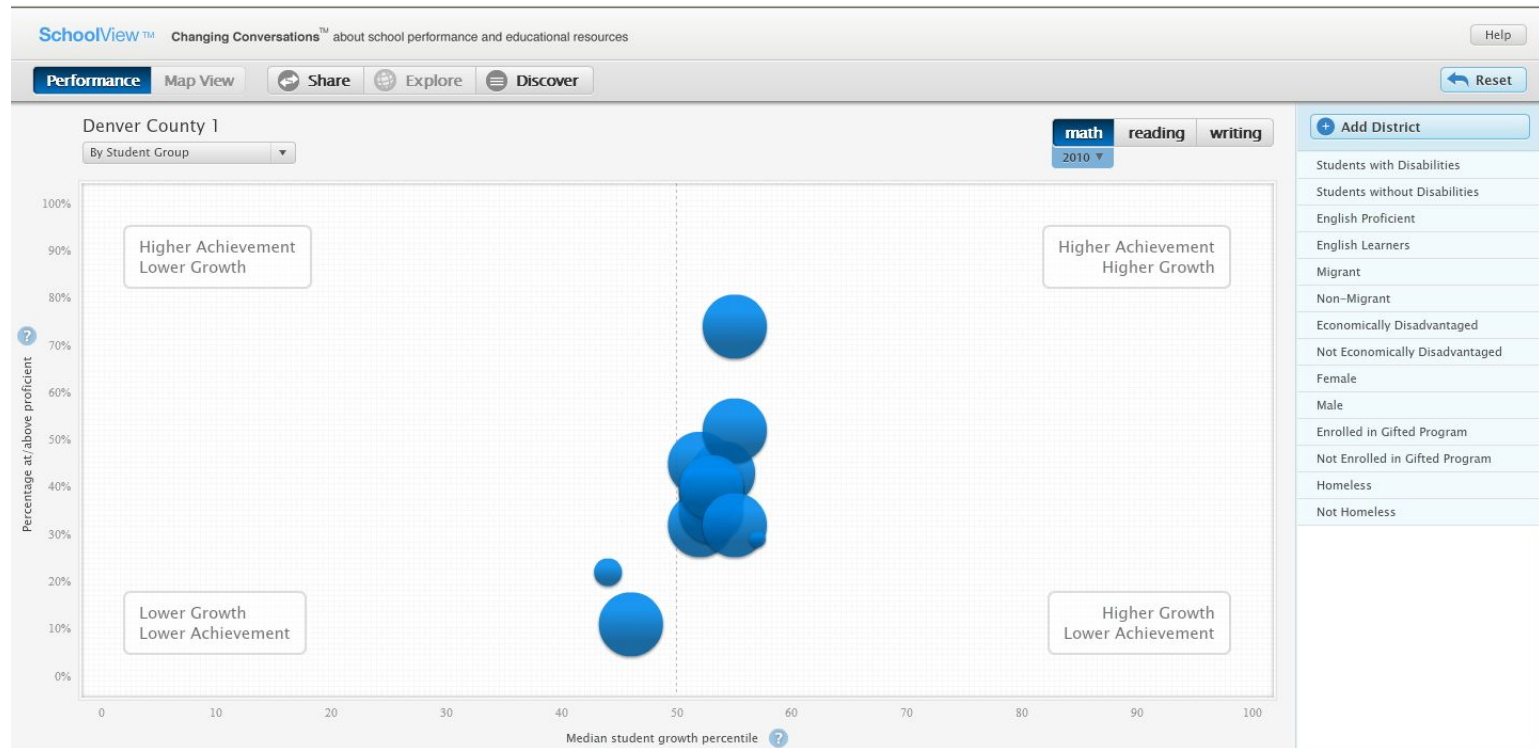
- **Accountability laws**
  - **1997 (initial law)**
  - **2004 (student growth)**
  - **2007 (more student growth)**
- **Data warehouse projects**
  - **2002 (basic accountability)**
  - **2007 (student growth extension and web portals)**
  - **2013 (scope and data integration extensions)**



# SchoolView Public Portal

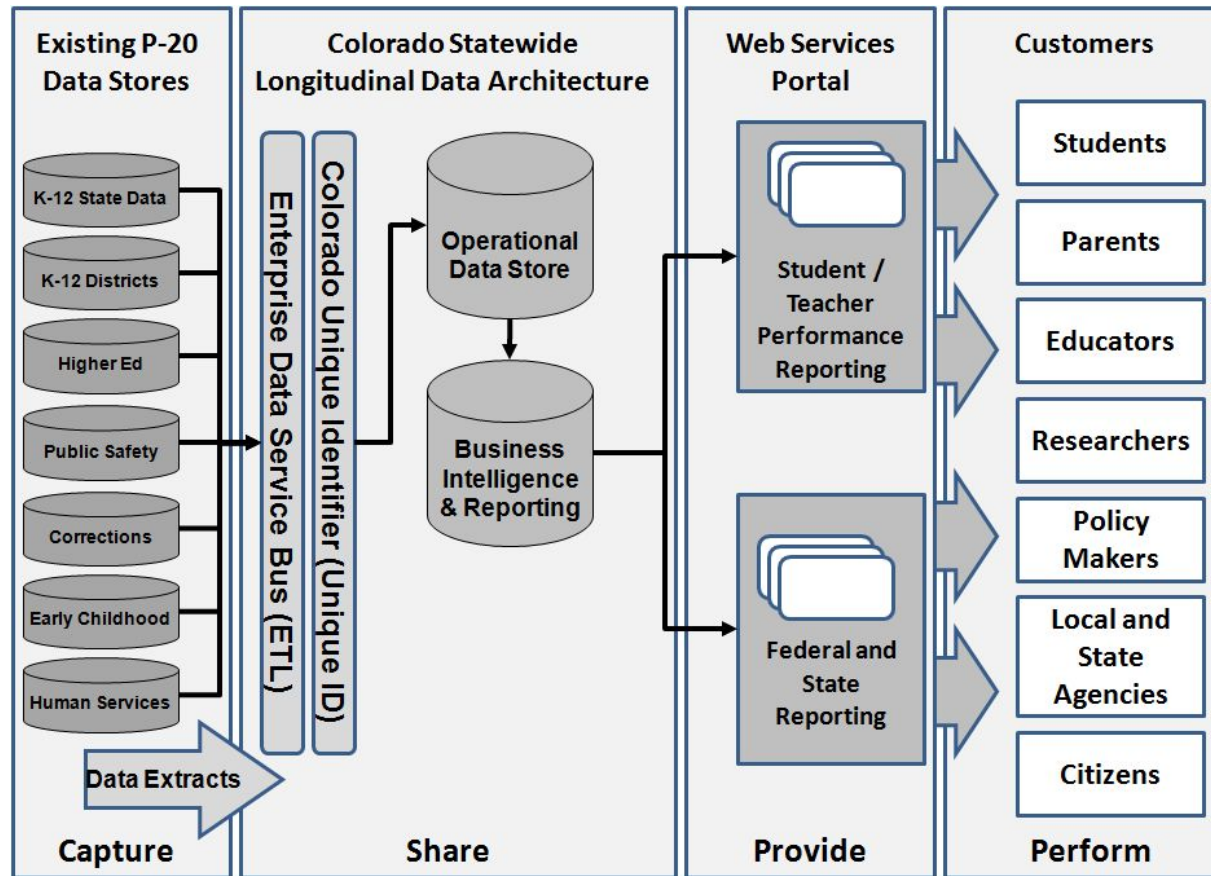


# SchoolView Drill-Down Display





# Federated Architecture

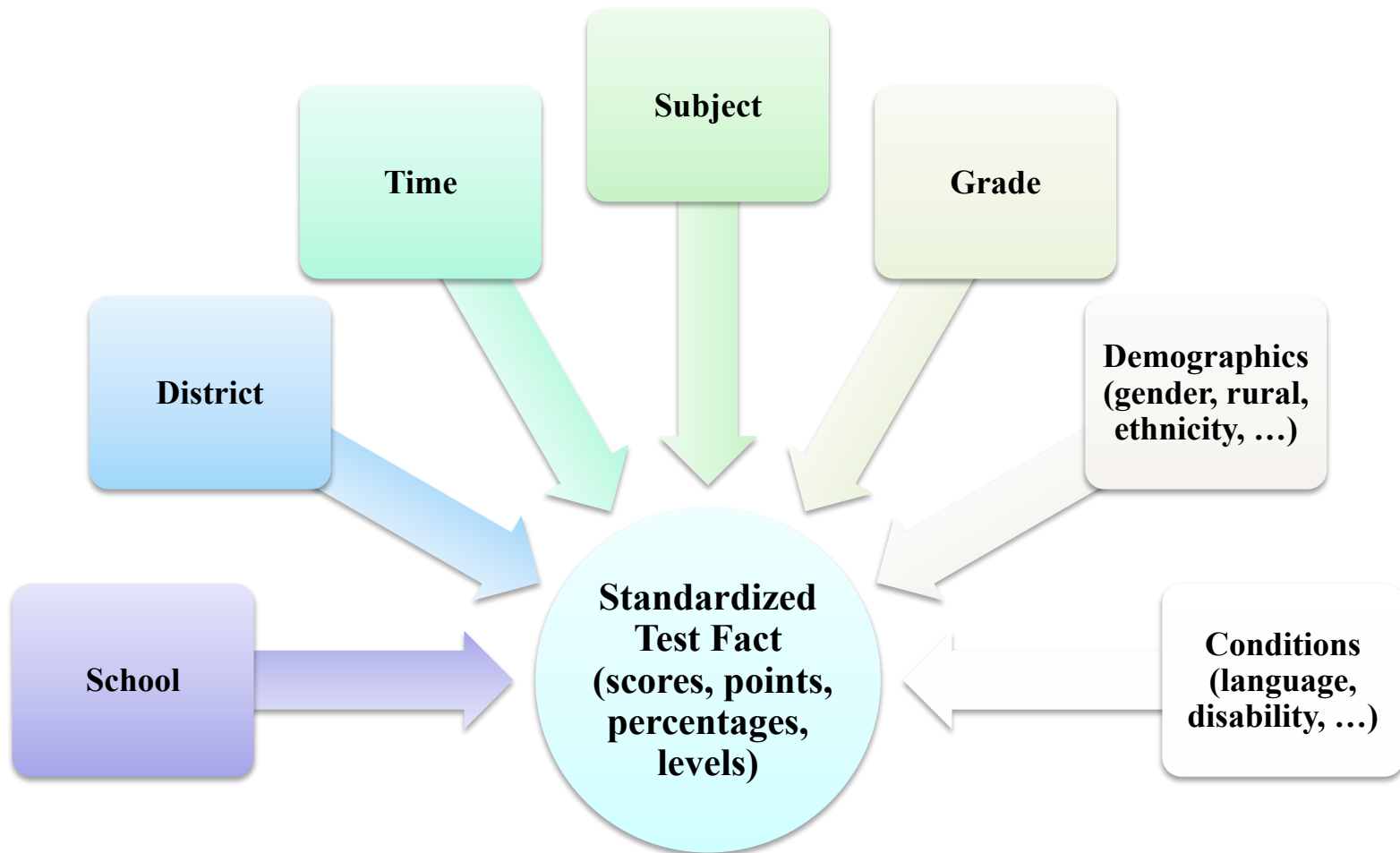


# Education Data Warehouse Design

- Complex collection of 9 constellation schemas
  - 32 fact tables
  - 94 dimension tables
- Modest size
  - 270 GB
  - 200 million rows
  - 1.6 million rows per year in major fact table



# Standardized Test Schema





# Dimension Tables

DIM_504_PLAN	DIM_ESL	DIM_IEP
DIM_ACCOMMODATION	DIM_ETHNICITY	DIM_LANGUAGE_BACKGROUND
DIM_BILINGUAL	DIM_FARM	DIM_MIGRANT_STATUS
DIM_CBLA_STATUS_CODE	DIM_GENDER	DIM_SCHOOL_EMH
DIM_CSAP_CONTENT_PROFICIENCY	DIM_GIFTED_TALENTED	DIM_SCHOOL_YEAR
DIM_CSAP_SUBJECT	DIM_GRAD_CLASS	DIM_SCHOOL
DIM_DID_NOT_TEST	DIM_GRADE_CALC_EXEMPTION	DIM_TIME_IN_DISTRICT
DIM_DISABLING_CONDITION	DIM_GRADE	DIM_TIME_IN_SCHOOL
DIM_DISTRICT	DIM_HOMELESS	DIM_TITLE_1



# Measures in Fact Tables

- Standardized test results
  - Additive measures
  - Show as central tendencies
- Summary fact tables with event counts
- Finance fact table
  - Semi-additive measures
  - Bonded debt level



# Summary

- Modest size data warehouse
- 10+ year development history under legislative mandates
- Coordination among many areas of state and local government
- New policies for data quality
- Brief review of SchoolView and data warehouse design

