



# Tableau Conference 2015



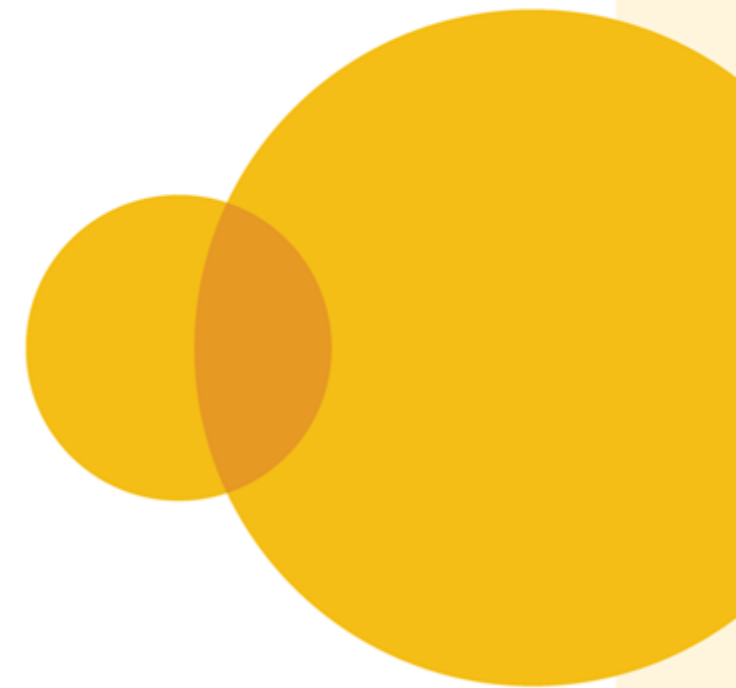
# welcome

**# UpliftData**



# **Data-Driven Culture at Uplift Education: Deploying Tableau Server in a K-12 District**

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Director of Data Strategy  
Uplift Education



# **Agenda**

**What is Uplift Education?**

**Uplift's Data and Data Needs**

**How We Got Here**

**Uplift's Data Model/Architecture**

**Using Tableau to Drive Collaboration**

**Tour of our Tableau Server Implementation**

**Lessons Learned**

**Q&A with the Team**

# What is Uplift Education?



Uplift Education is a free public charter school network serving over 14,000 students at 34 schools on 17 campuses in the Dallas-Fort Worth region.

Uplift's mission is to create and sustain public schools of excellence that empower students to reach their highest potential in college and the global marketplace and that inspire in students a life-long love of learning, achievement, and service in order to positively change their world.



# What is Uplift Education?

## Our Focus is on High Needs Students

59% of Uplift Middle School Students entered the School Year below grade level

33 Title 1 (High Number/Percentage of Low-income Students) Schools

80% of Uplift Students Will be the First in their Family to Attend College

## Results

100% of Uplift Graduates are Accepted into College

A 3.3 Point Annual Increase in ACT Scores in the Junior Classes Over the Last 3 Years

60% of Middle School Students are Growing Faster Than National Average on Nationally Normed Assessments

# Uplift Data and Data Needs



## Student Data

Assessments (Standardized Tests): Network-wide, State, and National  
Grades  
Attendance  
Discipline  
Demographics  
Zip-code  
Classes Taken  
Education Technology Data  
Growth Goals  
Social-Emotional Learning Survey Data

# Uplift's Data and Data Needs



## Teacher Data

Teacher Observations and Evaluations

Education/Certification Program

Years of Experience

Teacher Surveys

## Finance Data

Budgeted Enrollment/Attendance vs Actual Enrollment/Attendance

School Budgets

## Operations Data

Surveys

School Nutrition Program Data



# **Uplift's Data and Data Needs**

## **Unified Picture of a Student**

Integration of Multiple Data Sources – Tests, Grades, Attendance

FERPA Compliant

## **Unified Picture of a Teacher**

Scores of Students

Compliance with Entering Grades

Observation and Evaluation Scores

Action Steps based on Observation and Evaluation Scores

## **Deep Dives into Assessments**

Understanding How Students Scored at a Network, School, and Classroom Level

FERPA Compliant

School Trends/Teacher Trends/Demographic Trends

# **Uplift's Data and Data Needs**

## **Predictive Analytics**

Integration of Multiple Data Sources – Tests, Grades, Attendance  
FERPA Compliant

## **Ability to See Trends**

Understanding How Students Scored at a Network, School, and  
Classroom Level  
FERPA Compliant

## **Understanding Perception of Staff**

Post-Training Surveys  
End of Quarter Surveys  
Annual Great Places to Work Survey

**All of This Needs to Be Easily Accessible**

# How We Got Here

## 2011/12: Grant to Build an Interactive Data Platform

Michael and Susan Dell Foundation Sponsored

After Research, Tableau and Tableau Server Selected as our Platform

## 2012: First Forays into Dashboards

Standards Tracking Dashboard – First Dashboard Created

National Assessment Dashboards – Measures of Academic Progress

Dashboards deployed in SharePoint iframe

## 2013: Begin Integrating Data Sources via Tableau

Common Assessment Dashboards

Failing Grades Report

Measures of Academic Progress Dashboard

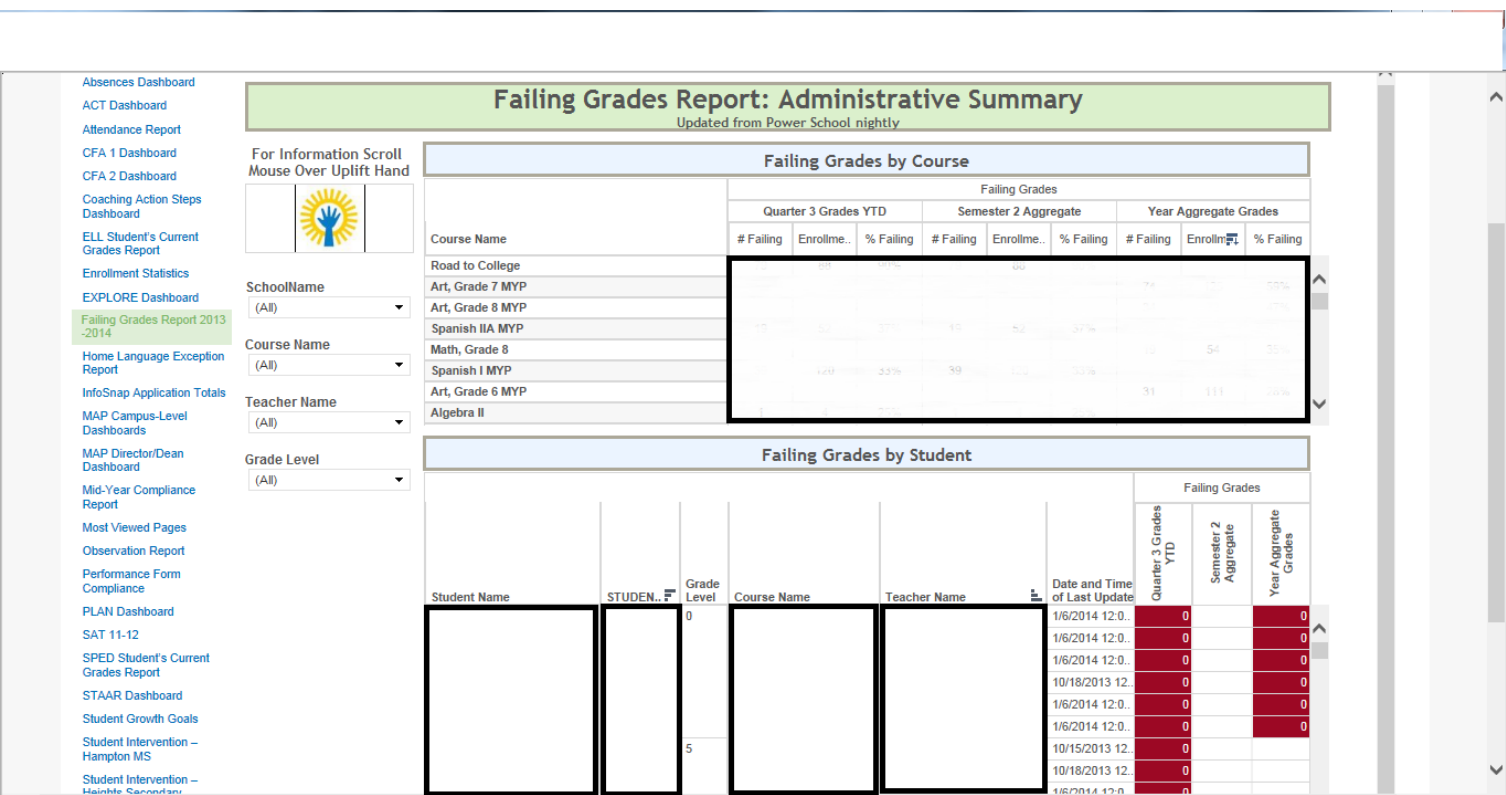
EXPLORE, PLAN, ACT Dashboard

# How We Got Here: 2013

This is the initial version of our Failing Grades Report

We originally put our dashboards in an iframe within SharePoint

However, the user experience was limited and precious screen space was taken up.



# How We Got Here: 2013

This is the initial version of our Student Growth Goals Dashboard

We started with boxy dashboards that were really more like filterable tables

Change Staff Member

Staff Member Home

Student Intervention Log - Multiple Entry

Mid-Year Review Form

Goal Setting Form

Observation Forms

ISR Observations

2012-2013 Forms

2011-2012 Forms

Other Forms

Reports

Reading Gains

ITBS: 2011-2012

MAP Teacher-Level Dashboards

Student Growth Goals

CFA 1 Analysis

CFA 2 Analysis

ACT Dashboard

EXPLORE Dashboard

PLAN Dashboard

Coaching Action Steps Dashboard

iShine Web Analytics

Student Intervention Dashboard

CNP Survey Results

Teacher Dashboard

Comparison Set Index

Calculation Method

Growth Goals Documents

Growth Goal Methodology

Comparison Sets

Scale Score Charts

Technical Details

National Studies

Click here:

<http://tinyurl.com/UpliftGrowth>

Select A Course

(All)

Select a Course Section

(All)

Select a Grade Level

(All)

Select a Growth Goal Test

☒ (All)

☐ ACT

☐ Plan

☐ SAT

Select Growth Goal Subject

☒ (All)

☐ Math

☐ Reading

Student Growth Goals

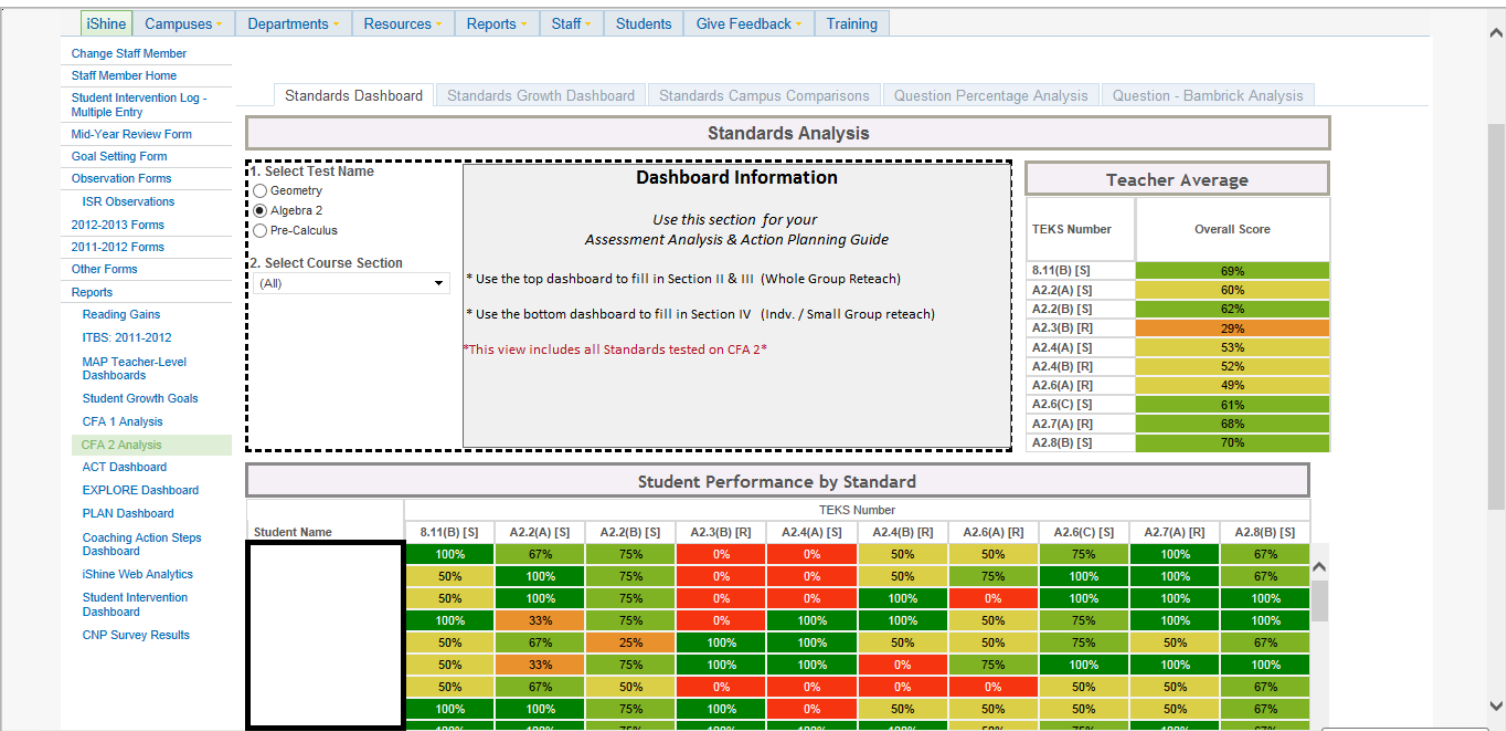
Course: All | Section: All

StudentID	StudentName	Grade Level	Original Test	Original Test Subject	Original Test Score	Growth Goal Test	Growth Goal Subject	Growth Goal Score
		11	ACT	Math	17	ACT	Math	17
		10	Plan	Math	20	Plan	Math	20
		11	ACT	Math	17	ACT	Math	17
		11	ACT	Math	16	ACT	Math	16
		11	ACT	Math	12	ACT	Math	12
		11	ACT	Math	14	ACT	Math	14
		10	Plan	Math	14	Plan	Math	14
		10	Plan	Math	17	Plan	Math	17
		10	Plan	Math	22	Plan	Math	22
		11	ACT	Math	12	ACT	Math	12
		10	Plan	Math	19	Plan	Math	19
		11	ACT	Math	17	ACT	Math	17
		10	Plan	Math	16	Plan	Math	16
		10	Plan	Math	15	Plan	Math	15
		10	Plan	Math	13	Plan	Math	13
		10	Plan	Math	15	Plan	Math	15
		10	Plan	Math	15	Plan	Math	15
		11	ACT	Math	17	ACT	Math	17
		10	Plan	Math	13	Plan	Math	13
		11	ACT	Math	19	ACT	Math	19
		10	Plan	Math	14	Plan	Math	14
		10	Plan	Math	19	Plan	Math	19
		11	ACT	Math	16	ACT	Math	16
		11	ACT	Math	16	ACT	Math	16
		10	Plan	Math	12	Plan	Math	12

# How We Got Here: 2013

This is the initial version of our Common Assessment Dashboard

We took advantage of the coloring and filtering properties to brighten things up, but were using Tableau as a snazzier version of excel





# How We Got Here

## **2014: Using the Power of SQL to Integrate Data Sources and Unleashing Tableau Server**

Creating Custom SQL Queries, Views, and Stored Procedures to Improve Dashboard Performance

Customizing Tableau Server and Utilizing Active Directory for FERPA

## **2015: Predictive Analytics, Standards Level Data, and Student Growth Goals**

Dashboards to Display Student Test Predictions

Scholar Profile Dashboard

Student Growth Goals Dashboard

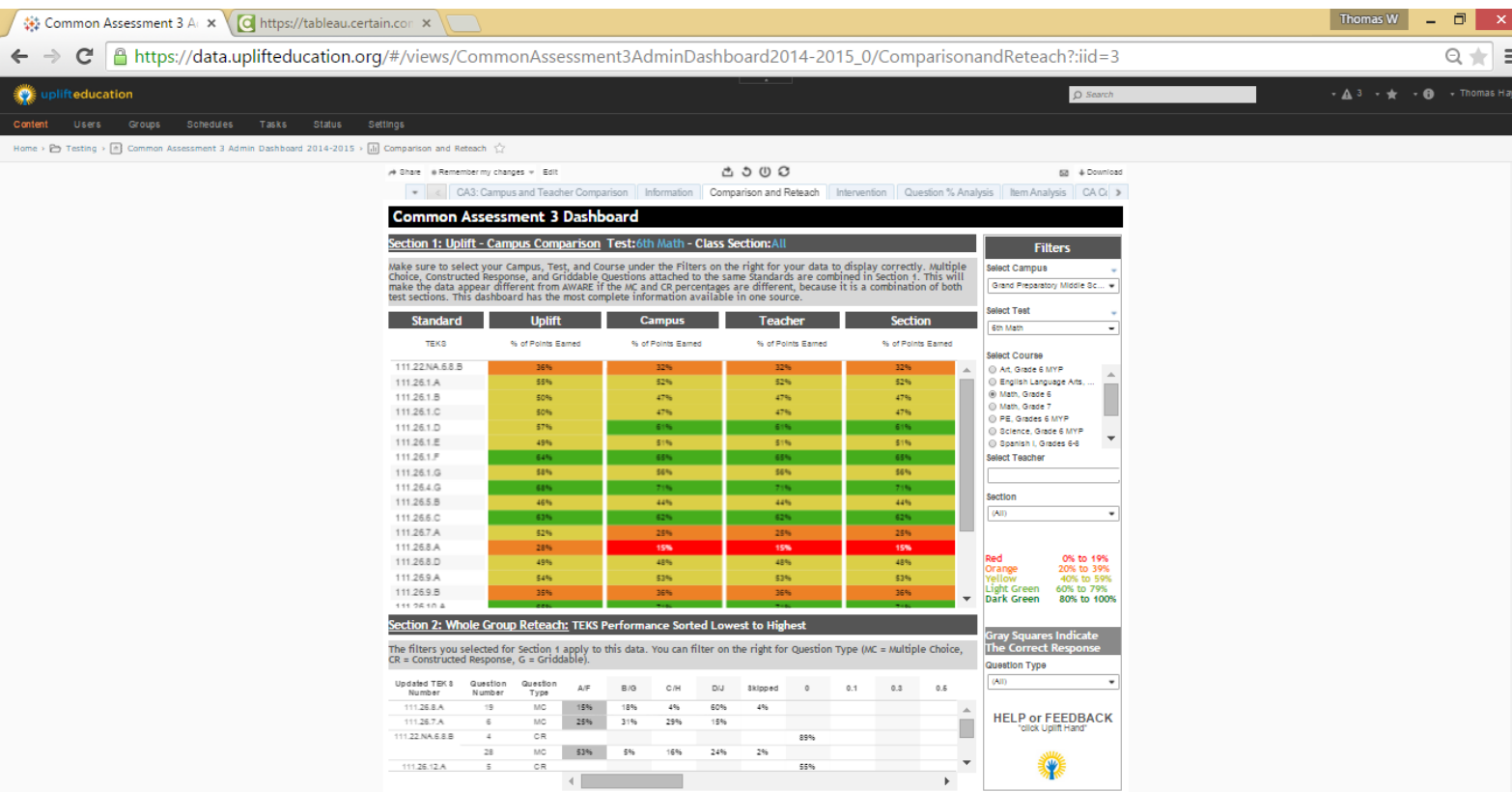
## **2015: Partnership with A Local School District to Display Data for a Subset of Their Teachers**

# How We Got Here: 2014

This is an updated version of our Common Assessment Dashboard

We redirected our teachers directly to Tableau Server, improving their user experience and dashboard size

We created a standardized format for our filters, which we have continued to improve

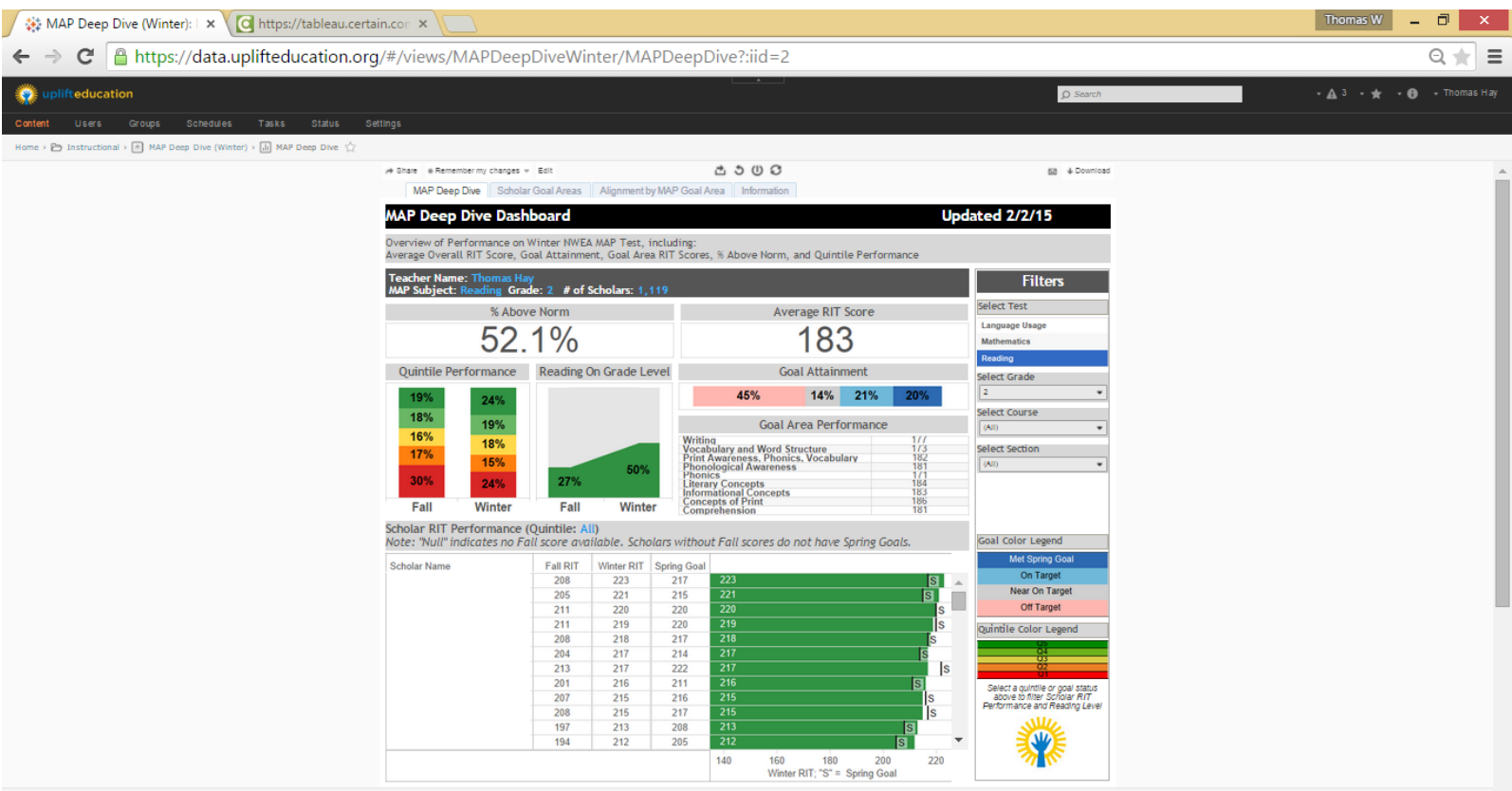


# How We Got Here: 2014

This is an updated version of our Measures of Academic Progress Dashboard

More color coding, Less Excel Like, and easier for our teachers to use and understand

We also began utilizing action filters



# How We Got Here: 2015

This is an updated version of our Scholar Profile Dashboard

Cleaner displays have won over teachers and easy export/print features have become standard

Adding the “Apply” options to our filters to improve performance and only filter when prompted

Assessment ViewGrades ViewPrint

Scholar Profile Dashboard

Select a scholar from the list below to view all historical scores and grades. Use the filters and options on the right to customize your data.

Scholar	English 2014-2015		Math 2014-2015		Science 2014-2015	
	Fall	Spring	Fall	Spring	Fall	Spring
	34 ACT		33 ACT		23 ACT	
11 Explore	23 Explore	19 Explore	18 Explore	17 Explore	24 Explore	
20 Explore	17 Explore	19 Explore	19 Explore	20 Explore	19 Explore	
14 Explore	22 Explore	17 Explore	25 Explore	17 Explore	20 Explore	
23 Explore	24 Explore	21 Explore	21 Explore	21 Explore	20 Explore	
17 Explore	21 Explore	17 Explore	16 Explore	24 Explore	24 Explore	
21 Explore	25 Explore	17 Explore	19 Explore	18 Explore	25 Explore	
17 Explore	17 Explore	17 Explore	25 Explore	17 Explore	24 Explore	
24 Explore	25 Explore	25 Explore	23 Explore	24 Explore	24 Explore	
20 Explore	25 Explore	21 Explore	25 Explore	24 Explore	24 Explore	
15 Explore	16 Explore	18 Explore	17 Explore	19 Explore	19 Explore	
20 Explore	24 Explore	23 Explore	25 Explore	24 Explore	22 Explore	
23 Explore	25 Explore	25 Explore	25 Explore	24 Explore	25 Explore	
22 Explore	25 Explore	25 Explore	25 Explore	25 Explore	25 Explore	
34 ACT		33 ACT		34 ACT		
32 ACT		30 ACT		27 ACT		
31 ACT		31 ACT		33 ACT		
28 ACT		30 ACT		25 ACT		
20 ACT		25 ACT		19 ACT		
30 ACT		24 ACT		24 ACT		
23 ACT		25 ACT		29 ACT		
Sort	Sort	Sort	Sort	Sort	Sort	Sort

Scholar: All

GradesAssessments

Filters

School  
(All)

Grade Level  
(Multiple values)

School Year  
2014-2015

Term  
(Multiple values)

Test  
(Multiple values)

Subject  
(Multiple values)

Level  
(All)

Scholar Name

Options

Test Names  
On

Grading Term(s)  
(All)

[High School] Top 100  
(All)

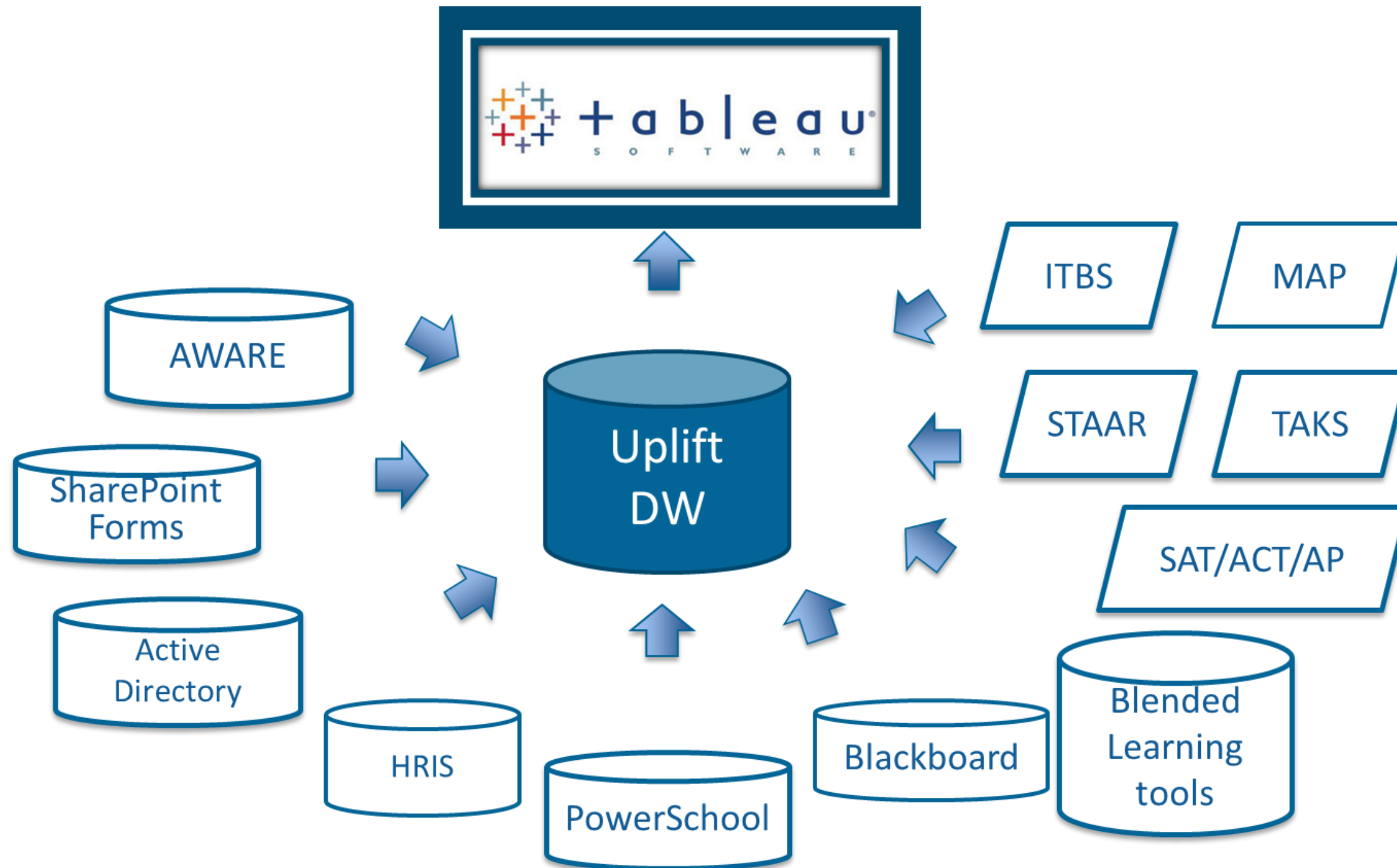
# How We Got Here

## 2016: Algorithmic Recommendations and JavaScript API

Recommendations based on Student and Teacher Data

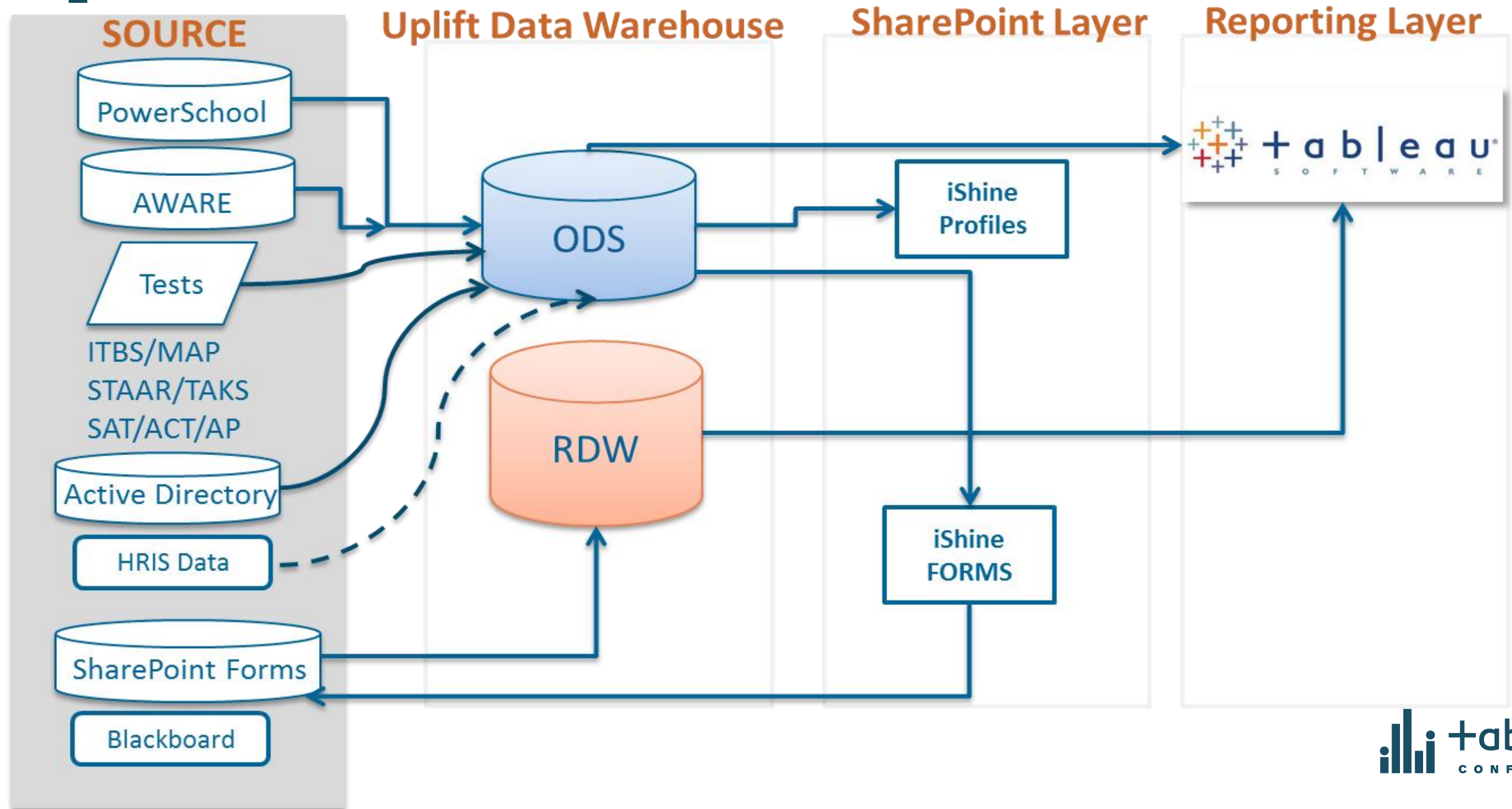
Using the JavaScript API to customize UI and add automated batch printing functionality

# Uplift's Data Model/Architecture





# Uplift's Data Model/Architecture



# Using Tableau to Drive Collaboration

## Three Times a Year All Uplift Instructional Staff Come Together

Review Data via a Dashboard on Student Performance

## Almost Every Subject/Teacher has a Data View

Over the Course of Collaboration Day, 800 Teachers are Viewing Data  
Sometimes Hundreds Simultaneously

## This Experience is Made Possible By Tableau and Tableau Server

Originally, We Used an External Vendor Product to Display the Data  
After Trial and Error, We Were Able to Use Tableau to Display the Data  
We Created an FTP with the Data Source so Data Within This  
Dashboard Updates Hourly as New Data Comes In

# Using Tableau to Drive Collaboration

## Uplift Does Collaborative Data Analysis Using Tableau Where Appropriate and Useful

All Leaders View Data Together via Tableau Dashboards at our Bi-Annual Leadership Academy and our thrice yearly Intersession  
Grade Level Teams or School Can Use Dashboards During Planning Meetings within the Organization Include Data Dives to Examine Data and Analysis Contained in our Dashboards

## We Have Unleashed the Power of Data Analysis

Teachers Can Analyze Data Together and Share Best Practices

Teachers Can See Performance Benchmarks

We Have Begun Including Predictions of Student Scores on Year End State Tests, Adding More Data for the Teachers to Use



# Demo: Tour of our Tableau Server

# Lessons Learned

## Change Management is the Key to Success

Tableau is an Amazing Dashboarding and Analysis Tool

Don't Treat It as a Change Management Tool

You Have to Show Your Users Why They Should Go To Tableau Server  
– And How It Makes Their Lives Easier

## Train Your Users

The Dashboard Seems Intuitive to You because You (or a Teammate)  
Made It

Our Team Has to be Data Coaches in Addition to Data Analysts

We Spend 10% to 20% of our Time on Campuses, Working with  
Teachers and Leaders to Review Data, Train Them Up on New  
Dashboards, or Gathering Requirements Based on User Feedback

# Lessons Learned

## Show Your Users How to Export Data

Teachers are going to want to Export Data from Tableau, so you might as well train them in the right way to do it

## The User Experience Matters

Our Users Don't Have Time to Watch The Wheel Spin as Data Loads, Data Needs to Load Within 5 Seconds or Less of a Click, or it won't be Used at All.

## Filters Must Be Intuitively Placed

If Not, Filters Effectively Don't Exist and Won't Be Used

## Tell Users When You Are Making Updates

They Appreciate Knowing When the Format is going to Change, or if their Favorite Feature is Going Away



# Lessons Learned

## Know Your Server Capacity

Forcing 800 Teachers onto Your Server All At Once Will Crash It When You Only Have Capacity for ~100 Simultaneous Users

## Keep Your Active Directory Up to Date

Or Else The Row Level Security You Have Put In Place Might Not Work the Way You Intended – No One Can See Anything

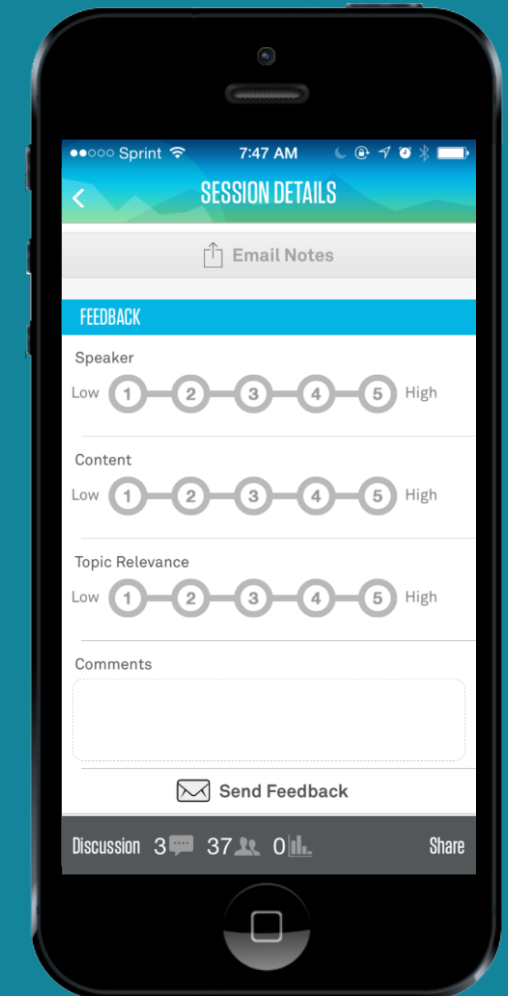
This is FERPA Compliant, but not Particularly Useful

## Test, Test, Test, Test

Less Surprises from Users is Better Than a Deluge of Emails



**Please complete  
the session survey  
from the Session  
Details screen in  
your TC15 app**



**#UpliftData**

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