Ed-Fi Bootcamp 2017
Welcome!
Logistics & Resources

**Bootcamp details**
- [https://techdocs.ed-fi.org/display/EE/2017+Boot+Camp](https://techdocs.ed-fi.org/display/EE/2017+Boot+Camp)

**Summit & Bootcamp App**
- Download the Conference App: [https://event.crowdcompass.com/edfi-summit](https://event.crowdcompass.com/edfi-summit)

**Bootcamp Wi-Fi**
- SSID: EDFIBOOTCAMP2017
- Password: Community365

**Ed-Fi Tools – Single Sign On!**
- If you didn’t receive the SSO welcome email on Monday (from noreply@salesforce.com)
- If you are Ed-Fi licensee → Check your junk folder …then send a request to [techsupport@ed-fi.org](mailto:techsupport@ed-fi.org)
- If you are not an Ed-Fi licensee → talk to or email Sean Casey (sean.casey@ed-fi.org)
Bootcamp 2017 - Presenters

Ed-Fi Alliance

Chris Moffatt  chrismoffatt99
Eric Jansson, ejansson
Cy Jones  cyjones
Vinaya Mayya, vimayya
Shannon Kerlick  skerlick-edfi
SayeeLakshmi Srinivasan  sayeelakshmis

Guest Presenters

Benjamin Meyers
Double Line Partners
Jamie Martinez
Volusia

Brad Banister  bradbanister
Double Line Partners
Curtis Lee
JeffCo

Dan Malagari  Malagari
Headspring
Michael Taylor
Indiana U

Geoff McElhanon  gmcelhanon
Certica
New for 2017

• From 1 day with 2 tracks in 2016 ➔ to 1.5 days with 7 tracks!
• Responding to feedback
  • More hands on activities
  • Broader range – both less technical and more technical
• We will be attempting to record breakout sessions
Boot Camp 2017 - Agenda

101 – Ed-Fi Technology Overview (Tues 9:00 – 12:00)

200 – Use Case Focus (Tues 1:00 – 5:00)

• 201: SEA Implementation (Sayee w/ Ben & Michael)
• 202: LEA Implementations (Shannon w/ Jamie & Curtis)
• 203: Vendor Implementations (Cy w/ Vinaya & Geoff)

200 – Technical Focus (Weds 9:00 – 12:00)

• 204: Ed-Fi Tools – MetaEd & MappingEdu (Eric w/ Brad & Sayee)
• 205: Ed-Fi ODS / API – New Capabilities (Chris w/ Geoff)
• 206: Analytics and Visualizations (Cy w/ Dan)
# Boot Camp 2017 - Agenda

<table>
<thead>
<tr>
<th>Day / Time</th>
<th>Theme</th>
<th>Session Title</th>
<th>Presenter(s)</th>
<th>Synopsis</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Arrival &amp; Breakfast</td>
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Introduction to Ed-Fi
What most teachers know about a new student when they walk into the classroom
Education Sector IT Systems: Complex, outdated, compliance-oriented reporting
Educators are using data to inform instruction and improve outcomes for students, but it isn’t always easy
A BRIEF HISTORY OF TIME ED-FI
Genesis of Ed-Fi (~2008/9)

1. Realization from Data Driven Education work the Michael & Susan Dell Foundation was doing across the U.S. The hardest and most expensive aspect of every project was gathering and aggregating disparate data.

2. IBM study of data challenges at Texas Education Agency (TDCARSI)
Genesis of Ed-Fi (~2008/9)

1. Inability of current system to deliver data that is timely, relevant, and actionable
2. Current data collection model imposes significant burden on local districts
3. Lack of statewide standards for ISD data systems
4. Difficult to integrate student data across data sources due to limited use of the unique Texas Student Identifier
5. Cumbersome and inefficient reporting and analysis capabilities
6. Inability to easily access comprehensive longitudinal data
7. Lack of agency-wide standards for data collection and storage
8. Lack of a single TEA point of contact for all data collection to resolve issues

Figure 1-1 TDCARSI Stakeholder Issues

Figure 1-4. Summary of Recommendations

1. Streamed data collection model of disaggregated student data into an Operational Data Store (ODS)
2. District and TEA validated data loaded into a data warehouse to support program analysis and reporting
3. Business intelligence and reporting tools to support end user analysis and reporting
4. Unique statewide Texas Student Identifier (TSID) embedded in the collection and integration of the data
5. Use of a Unique Teacher Identifier (UTI) and creation of a classroom link
6. Creation of a voluntary state sponsored Student Information System (SIS)
7. Establishment of an Enterprise-wide Data Governance Strategy and Board
8. Establishment of a TEA Enterprise Data Management Office (EDMO)
“The Ed-Fi Solution accelerates student achievement by extracting student information from a variety of sources, and integrating the data into Web-based dashboards, reports and other applications...”
Ed-Fi – Gen 1 (~2011 – 2013)

v1.x Data Standard ➔ largely informed by Ed-Fi Dashboard use-cases* - targeted at SEA deployments

v1.x Technology ➔ batch/bulk-oriented approaches to data ingestion and transformation

Ed-Fi v1.x Solution Stack
Ed-Fi – Gen 2 (~2014 – Current)

Central theme -> Activating the Ed-Fi ecosystem to realize the promise of (near) real-time data → REST API’s

The path was forged by the Tennessee DOE’s Ed-Fi Implementation

Pro Tip: Attend the ODS/API – New Capabilities session on Weds for “The rest of the story”
Ed-Fi – Gen 2 (~2014 – Current)
Ed-Fi – Gen 2 (~2014 – Current)
Ed-Fi – Gen 2 (~2014 – Current)
Organizing for scale
Ed-Fi – Gen 2 (~2014 – Current)

Organizing for scale
Ed-Fi – Gen 2 (~2014 – Current)

Organizing for scale

Is there a ticket in Tracker?

Have you checked TechDocs?
Ed-Fi – Gen 3 (~ 2018 ...)

Under Construction
Key Ed-Fi Fundamentals - Across Generations

- Timely collection, exchange & availability of granular data
- Enable high-quality, data-driven solutions → empower educators and yield better student outcomes
- Cost savings for states and districts
- And more…
Ed-Fi Technology 101 - Agenda

9:30 – 10:00
Data Standard

10:00 – 10:30
Ed-Fi ODS / API

10:30 – 11:00
BREAK

11:00 – 11:15
Ed-Fi Dashboards

11:15 – 11:40
Ed-Fi Tools

11:40 – 12:00
Technology Roadmap
Ed-Fi Technology - 101
Ed-Fi Data Standard

Eric Jansson
A standard makes complex systems run smoothly, coherently, and efficiently for all parties.
What is a Standard?

• A technical standard is an established norm or requirement in regard to technical systems

• Usually a formal document that establishes uniform engineering or technical criteria, methods, processes and practices

• May be developed privately or unilaterally (e.g., by a corporation, regulatory body, military, etc.)
  • Standards can also be developed by groups such as trade associations.
  • Standards organizations often have more diverse input and usually develop voluntary standards. These might become mandatory if adopted by a government (i.e. through legislation, business contracts, etc.)

Technical standards define how systems interoperate.

Data Standards define the data elements and structures used to store and exchange educational information.

Includes achievement standards, plus curriculum and testing standards. In the US, academic standards described in the form of learning objectives.

http://www.ofthat.com/2013/03/a-taxonomy-of-education-standards.html
Example:
- Title: Birth Date
- Definition: Day the individual was born
- Format: year-month-day

Example:
- A student entity might include the properties (elements): name, birthdate, gender, address
- The student entity would have a many-many relationship with a Class entity

Example:
- 2 common frameworks for serializations are XML and JSON
- Conversion from a logical data model to a particular serialization is not automatic – and needs a specification of exactly how a data model is rendered into a particular serialization
- Typical transport layers include Messaging (REST, SOAP, ESB), Transport (HTTP or FTP), and Network (e.g. TCP/IP)
- At this level, “out-of-the-box” interoperability between conforming applications is enabled.

Ed-Fi Standards Components

**REST API Specifications**
- Deal with specific use cases
- Defined in Open API and normative guidelines
- Data modeled in JSON

**XML (Bulk) Specifications**
- Deal with specific use cases
- Defined in XSD
- Data in transit is in XML

**Ed-Fi Unifying Data Model**
- A logical model in UML and a Data Handbook
- The foundation of all Ed-Fi technical standards
- Ensures that all standards are compatible
UDM Goals and Domains

GOALS
• Define data related to student performance to help drive decisions to improve student performance
  • Includes some ancillary domains indirectly related to student performance (staff credentials, etc.)

DOMAINS
• Alternative/Supplemental Services
• Assessment
• Bell Schedule
• Discipline
• Education Organization
• Enrollment
• Finance
• Graduation
• Intervention
• School Calendar
• Staff
• Student Academic Record
• Student Attendance
• Student Cohort
• Student Identification and Demographics
• Teaching and Learning
Unifying Data Model (UDM)

• UDM sometimes referred to as the “Ed-Fi Data Standard”
• Made up of entities, attributes and associations
• Highly normalized - optimized for storage of very granular data
• Available in UML in Github (all versions) and via Data Handbook (v2.1+)
• Versions
  • Main version in use in 2.0
  • Next version proposed for implementation is 2.1 (could change: watch RFCs and Data Standard space in TechDocs)
Ed-Fi API Specifications

- Define Application Programming Interfaces (APIs) for movement of data
- Follow REST(ful) conventions
  - HTTP using verbs GET, POST, PUT, DELETE
- Versions
  - Ed-Fi ODS API is the de facto API standard, based on Open API-based specification.

```
GET /sections/FCYW5-UYK32-8YTQ7

{
  "schoolId":12345,
  "classPeriodName":"4th Period",
  "classroomIdentificationCode":"abcde",
  "localCourseCode":"Math 101",
  "termTypeId":1,
  "schoolYear":2012,
  "uniqueSectionCode":"3FJ56",
  "sequenceOfCourse":1,
  "availableCredit":1.5
}
```
API Configurations - Different Use Cases

Data Management API
• Target system must implement the API
• Source system responsible for synchronizing
• Typical for use cases involving transactional, near-real-time updates

Data Access API
• Source system must implement the API
• Target system calls the API
• Typical for use cases needing periodic or on-demand synchronization
• For Ed-Fi a subset of these APIs are called “composite” APIs as they “compose” multiple entities into one
XML (Bulk) Specifications

• Designed for moving large amounts of data in a bulk format
• Two parts
  • **Core XML Schema Definition (XSD):** defines all entities, attributes and associations
  • **Interchange Schemas:** defines how entities are packaged (into use-case-based bundles)
## API vs Bulk Capabilities

<table>
<thead>
<tr>
<th>API</th>
<th>Bulk</th>
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<tbody>
<tr>
<td>JSON</td>
<td>XML</td>
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<tr>
<td>Synchronous responses</td>
<td>Asynchronous responses</td>
</tr>
<tr>
<td>Near real-time as data is changing in the source application</td>
<td>For initial load or periodic refreshes</td>
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<tr>
<td>Full CRUD for data writes</td>
<td>Upsert (Create and Update) only</td>
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<tr>
<td>Create and retrieve UniqueIds</td>
<td>No ability to create and retrieve UniqueIds</td>
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</tbody>
</table>
Stuff that is NOT a Standard

- No relational database model: the Ed-Fi ODS is a physical implementation of the UDM, but it is not a standard per se
- Ed-Fi standards don’t focus on data at rest, but data in transit!
Extensibility

• Ed-Fi’s standards are extensible, meaning that individual stakeholders can add new entities, attributes and associations*

• Extensibility is the opposite of standardization, so why support it?
  • K12 is full of diverse data mandates and no single standard can capture this diversity
  • Extensibility allows the community to try new models and exchanges, which can grow the standards

• Extensibility is a power and also a responsibility
  • It should not be used to duplicate existing data elements
  • It should not be used to aggregate existing granular data already in the model
  • It should be done by consulting community on possible existing extensions (see tools discussion)

* Note: under the next generation of Ed-Fi standards and technology, these extensions will always be explicitly in the extending organization’s namespace to help prevent confusion!
<table>
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<tr>
<th></th>
<th>Application Integration</th>
<th>Transport</th>
<th>Serialization</th>
<th>Data Model</th>
<th>Data Dictionary</th>
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<tbody>
<tr>
<td>Question</td>
<td>What additional application behavior is expected?</td>
<td>What protocols are used to move data between systems?</td>
<td>How are data elements represented in transit?</td>
<td>How do data entities relate to each other?</td>
<td>How are data elements defined?</td>
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<td>Standards and Ed-Fi</td>
<td><strong>Ed-Fi</strong></td>
<td><strong>REST API</strong></td>
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<td>Sophistication of integration</td>
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Where is this Stuff?

- **Source files** are on GitHub
  - UML diagrams, in Visio (v2.0+) and .ea files (v2.0 and prior)
  - XSD bindings
  - OpenAPI format (forthcoming!)
  - Sample data (in Ed-Fi XML)
- **How-to’s and documentation** are on TechDocs
- **Suggestions and issues** are reported on Tracker
  - Don’t expect an immediate solution – this isn’t like fixing a software bug! Think of this as being like planting an acorn.

You will often interact with data standard concepts through implementation artifacts (e.g. database schemas, Swagger, etc.), but don’t overlook them as an aid for insomnia!
## Data Standards – Wrap Up

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Ed-Fi Tools

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Technology Roadmap
Ed-Fi Technology - 101
Ed-Fi Operational Data Store & API
Chris Moffatt
Ed-Fi Operational Data Store & API

**Transactional Data (JSON)**
- SIS/LMS
- Content Management
- Instructional Apps
- Financial/HR
- Operations (food, transport, library)

**Bulk Data (XML)**
- State Assessments
- National Assessments
- Other?

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**Ed-Fi ODS API**

- Attendance
- Behavior/Intervention
- Course Grades
- Roster
- Curriculum
- SAT/ACT/PSAT
- Teacher Certification

**Data Warehouse**

**Ed-Fi Dashboards**

**Reports/Analytics**
### Platform Fundamentals

**An Open Source, Customizable System**
- The Ed-Fi ODS / API is a highly customizable system.
- The source code distribution has a complete set of features and can easily be set up to run on a development machine or test environment.
- Some analysis, planning, and development work are required to put the complete system into production for an enterprise.

**Made to be Secure**

**Made to be Extended**

**Code Generation Wherever Possible**

**Built for Agile Development and Continuous Integration**

**Support for Transactional & Bulk Modes**
When the ASP.NET WebAPI framework receives the JSON payload, it is deserialized into the C# Resource class model. The data is then copied to the Entity model which matches the structure of the ODS database.
# Platform Fundamentals

- **An Open Source, Customizable System**

- **Made to be Secure**
  - Built from the ground up to provide developers and agencies with a solution to keep data secure and private
  - Regular external security audits – in addition to development best practices

- **Made to be Extended**

- **Code Generation Wherever Possible**

- **Built for Agile Development and Continuous Integration**

- **Support for Transactional & Bulk Modes**
Platform Fundamentals

An Open Source, Customizable System

Made to be Secure

Made to be Extended

- Out of the box, the ODS / API core data model covers a wide swath of information related to the K–12 domain, with a focus on student achievement.
- The data model is easily* extended to handle information specific to your environment -> MetaEd IDE

Code Generation Wherever Possible

Built for Agile Development and Continuous Integration

Support for Transactional & Bulk Modes
Platform Fundamentals

An Open Source, Customizable System

Made to be Secure

Made to be Extended

Code Generation Wherever Possible

- Much of the data access code and API surface have architectural patterns defined, so the ODS / API leverages code generation techniques throughout the system
- MetaEd generates core artifacts - e.g. SQL Schema, Bulk XSD’s, API Semantic Model (coming soon)

Built for Agile Development and Continuous Integration

Support for Transactional & Bulk Modes
Platform Fundamentals

- An Open Source, Customizable System
- Made to be Secure
- Made to be Extended
- Code Generation Wherever Possible
- Built for Agile Development and Continuous Integration
  - The solution ships with unit tests and integration tests that provide assurance that the system functions as intended.
  - Under Agile development methodologies, code introduced to fix existing issues or provide new features should have accompanying test coverage, and should not break any pre-existing tests
  - “Some assembly required” for deployments beyond developer machine. See Platform Dev. Guide - Deployment
- Support for Transactional & Bulk Modes
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- Bulk loading is useful for initial loading of data and solutions where data is updated in batches (e.g., for organizations that feed data on a nightly schedule)
- A transactional model is useful once you have data in the system. Individual records and fields can be updated in real-time (or near real-time) by client applications
Ed-Fi ODS / API in Field Implementations

- Students & Parents
- Enrollments
- Courses, Sections, Students & Teachers
- Attendance
- Discipline
- Grades & credits
- Programs

- Staff
- Employments, Assignments
- Credentials, Experience
- Roles

- Assessment Type, Purpose, Grade Level
- Performance levels (cut scores)
- Learning objectives, standards
- Student scores, accommodations, language

- Program participation
- Special classifications
- Services received by students

Granular data flows from districts and other sources transactionally or in bulk uploads

Unique identity is maintained throughout the system

Operational Data Store (ODS)

Data Warehouse (DW)

Single Sign-On Identity Management System

Transfer student data automatically flows to the new school upon enrollment

Unified and validated data moves to the data warehouse

Snapshots of data and aggregates are captured for accountability reporting

Dashboards drive student-level decision making for teachers and administrators

Unique Person ID System

State Accountability System (EIS)

State Reports

EDFacts Files

Reporting is driven off of the data warehouse

EDFacts Files

Warehouse holds
- Historical/longitudinal data
- Accountability data
- KPIs

State Accountability System (EIS)

Student Performance Dashboards

Dashboard drive student-level decision making for teachers and administrators
Ed-Fi ODS / API – Example Data Flow

Current Ed-Fi Certification - **Student Information Systems for ODS / API v2 Certification** – certifies SIS’s that call the Ed-Fi ODS Data Management API’s

- Ed-Fi ODS API’s - For Data Management (JSON) (GET, PUT, POST, DELETE)
- Ed-Fi ODS Bulk API (XML)
- Ed-Fi Composite API’s (GET) (Enrollment, Assessment)

SIS with Ed-Fi API Integration (API Consumer)

Ed-Fi ODS / API (API Producer)
Ed-Fi Cloud ODS / API
1. Get Started with ODS / API (1-5 days)
   - Ensure you have access to .Net developer resources (agency or Systems Integrator)
   - Following “Getting Started” instructions and pulling source code
   - Get solution up and running on a developer machine

2. ODS / API - Dev Ops (Days - Weeks)
   - Build out development and deployment infrastructures
   - Continuous integration: development -> staging -> production sites

3. ODS / API - Extensions & Customizations (Weeks – Months)
   - Determine requirements for extensions – MappingEdu
   - Develop, integrate extensions into solution – MetaEd
   - Customize if needed – e.g. SEA-specific Identity integration, additional data validation - .Net, c#

4. ODS / API Source System Integration (1 day – 1 year)
   - API Client’s integrate with the ODS / API → Leverage Ed-Fi-certified SIS’s
   - ETL/bulk for “long tail” data sources

5. Downstream Use Cases (Days - Months)
   - Analytics, Reporting, Data Exchange, etc.

6. Test, Deploy, Maintain, Upgrade (Ongoing)
   - Simple security config tool
   - Lots of scripts, developer time

---

Enterprise ODS/API – Implementation Steps
Cloud ODS / API - Differentiation

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5. Downstream Use Cases (Days - Months)
   - Analytics, Reporting, Data Exchange, etc.

6. Test, Deploy, Maintain, Upgrade (Ongoing)
   - Simple security config tool >> ODS Admin App – improved management capabilities
   - Lots of scripts, developer time >> reduced script, manual work

ODS / API core artifacts - deployed into customers public cloud tenancy in < 30 mins
# ODS/API – Product Differentiation

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<th><strong>Cloud ODS / API</strong></th>
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<td>• Starts with source code and documentation</td>
<td>• Set up in &lt; 30 mins – for a “core experience”</td>
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<tr>
<td>• Highly extensible and customizable</td>
<td>• v1.0 RC offers simplified “core” experience</td>
</tr>
<tr>
<td>• Set up and deployment investment is significant, and requires significant developer expertise - usually requiring Systems Integrator</td>
<td>• Improved manageability</td>
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<tr>
<td>• Upgrade and migration complexity – a trade-off w/ extensible and customizable</td>
<td>• Not extensible (out of the box)</td>
</tr>
<tr>
<td></td>
<td>• Lightweight bulk load support</td>
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<tr>
<td></td>
<td>• Upgrade and migration support</td>
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Ed-Fi Technology 101 - Agenda

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10:00 – 10:30: Ed-Fi ODS / API

10:30 – 11:00: BREAK

11:00 – 11:15: Ed-Fi Dashboards

11:15 – 11:40: Ed-Fi Tools

11:40 – 12:00: Technology Roadmap
Ed-Fi Technology -101
Ed-Fi Dashboards (& COTS Visualizations)

Cy Jones
Ed-Fi Dashboards

• Single source of interval refreshed data
• Replaces hunting for information in multiple paper, electronic files, & separate systems
• Comprehensive data set that starts with student and rolls up to classroom, school, and district view
• Vetted and used by thousands of educators
• Metrics grounded in research.
• Demo information available on the Quick Start User Guide page in TechDocs.
Ed-Fi Dashboards

• Use the Ed-Fi data standard to automatically pull and integrate data from state and district systems
• Customize the Ed-Fi dashboards for state- and district-specific priorities, policies, assessments, and processes
Ed-Fi Dashboards – v2.0 Solution Stack
Dashboard Details

• .NET ETL application
  • Replaced the SSIS packages of Ed-Fi Dashboards v1.2
  • Works against v1.2 ODS or v2.x ODS
  • Developed for better performance

• Metric Metadata Utility
  • Created to manage the Metric metadata
  • Generalized Assessment Metric Configuration

• .NET MVC Dashboard UI Application
  • Extensible with a Plug-In Architecture
  • Security claim sets to fit education needs
Dashboard Details

• Community contributions to the dashboards available on the Ed-Fi Exchange
  • Usage Module
  • Early Warning and interventions Catalog
  • Early Learning Insights
  • NWEA MAP Assessments

• Roadmap
  • Dashboards v2.0.3 just released
  • Dashboards v2.1
    • Support for ODS/API 3.0
    • Support for Ed-Fi Data Standard v2.1
    • Release aligned to shortly after ODS/API v3.0

• Ed-Fi Dashboards on TechDocs
Dashboard Destiny

• The Ed-Fi Dashboards have been around for quite a while. During this time the Ed-Fi Alliance formulated some loose assumption about the Ed-Fi Dashboard mostly based on second hand knowledge

• *Dashboard Destiny* is an initiative to survey the Ed-Fi Dashboards implementer community with an end goal of receiving factual field data about the state of the Ed-Fi Dashboards, a determine the future direction

• Dashboard Destiny Session Friday 9:00AM in TX Ballroom 5
Ed-Fi Enables Data Analytics
Early Warning Indicators using Microsoft Power BI

<table>
<thead>
<tr>
<th>School Name</th>
<th>Washington Middle School</th>
</tr>
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<tbody>
<tr>
<td>Early Warning Metrics</td>
<td>On Track</td>
</tr>
<tr>
<td></td>
<td>298</td>
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**Student Population Trends**

**% Students At-Risk or Early Warning**

**Year-To-Date Metrics**

<table>
<thead>
<tr>
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<th>Value</th>
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<tbody>
<tr>
<td>Enrollment</td>
<td>478</td>
</tr>
<tr>
<td>Average Overall Grade</td>
<td>82.74</td>
</tr>
<tr>
<td>Average English Grade</td>
<td>73.01</td>
</tr>
<tr>
<td>Average Attendance Rate</td>
<td>91.20%</td>
</tr>
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<td>Average Math Grade</td>
<td>80.51</td>
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Ed-Fi Technology -101
Ed-Fi Tools

Eric, Chris, Shannon
Data Standard Tools
Most Ed-Fi ODS API implementation projects look like this:

Your Data Schema (Start) → Map to Target Schema → Identify Extensions → Create Extensions → Implement! (End)

MappingEDU

MetaEd

Ed-Fi Tools are designed to assist with stages in this process – the two main tools provided are MappingEDU and MetaEd.
MappingEDU

• A Web-based tool for mapping any data standard to another data standard

https://mappingedu.ed-fi.org
Targeted at making the connection of data to and from the Ed-Fi data standard products easier.

Also supports mappings between ANY two data definitions.
Advanced Features

- Workflow (review, approval)
- Automapping
- Publication
MetaEd and MetaEd IDE

- Captures extensions to the Ed-Fi data model in a simple domain specific language
- Removes the need to write complex SQL and data definitions in XML for extending the Ed-Fi ODS and API
  - MetaEd handles the hard stuff
- Comes with an IDE based on the Atom text editor

https://techdocs.ed-fi.org/display/METAED/MetaEd+and+the+MetaEd+IDE
Domain Entity Student [585]

documentation "This entity represents an individual for whom instruction, service
shared string UniqueId [1785]
  documentation "A unique alphanumeric code assigned to a student."
  is part of identity
  with context Student
  is queryable field
common StudentIdentificationCode [1703]
  documentation "A coding scheme that is used for identification and record-kee
  is optional collection
  is queryable field
inline common Name [1694]
  documentation "Full legal name of the person."
  is required
  is queryable field
common OtherName [1696]
  documentation "Other names (e.g., alias, nickname, previous legal name) assoc
  is optional collection
  is queryable field
enumeration Sex [1701]
  documentation "A person's gender."
  is required
Ed-Fi Validation Tool

Inspects and validates Ed-Fi bulk XML files against the Ed-Fi XSDs and Interchange schemas.

https://validate.ed-fi.org
Community Tools
Ed-Fi Community365

STRONGER TOGETHER
You asked and we listened. Community365 is a new initiative that puts the Ed-Fi community at the center of everything we do, every day.

ISSUE TRACKER
The "nervous system" for all things related to Ed-Fi. Go here to submit a ticket, propose a change or suggest a bug fix.

TECH DOCS
A one-stop online repository for all technical documentation related to Ed-Fi Technologies.

MAPPINGEDU
Mapping tool for Ed-Fi Community, featuring an Extension Report, which allows community members to view and learn about extensions to the data standard by education agencies.

GITUB
We host all of our code for Ed-Fi Technology components on GitHub.

ED-FI EXCHANGE
Technology hub for community contributions aligned to the Ed-Fi Data Standard. Go here to find community-developed solutions to common problems.

VALIDATION SERVICE
Enables Ed-Fi adopters to run validation checks against Ed-Fi data exchanges that have been created according to the Ed-Fi Data Standard.

JOIN OUR COMMUNITY SLACK CHANNEL
We’ve created a Slack channel that is open to the public, which can be treated like a town hall, for communication, support, knowledge sharing, and much more.

MORE INFO
Ed-Fi Exchange

• Searchable repository of Ed-Fi Data Standard aligned solutions developed & contributed by members of the Ed-Fi community

• Model RFP and best practices guidance for Ed-Fi data systems

• Provides visibility & access to innovative implementations aligned to core Ed-Fi technology
## Ed-Fi Tools – Wrap Up

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Ed-Fi Technology – 101
Ed-Fi Technology Roadmap
Eric Jansson
3.0 ODS/API - TECHNICAL PREVIEW

Technical preview release of the ODS/API v3.0. This release is not intended for production use, but is intended to allow agencies, vendors and other community members to test, understand and begin planning for ODS/API v3.0.

For details, please see the 3.0 ODS/API release (will include previews of all major v3.0 improvements).
The forecast is that agency governance and preparation takes place over the 2017-19 process, with the ecosystem migrating for the 2019-20 school year.

This revision was made following 2017 Ed-Fi Technical Congress.
Hold The Date!

Ed-Fi Technical Congress – 2018
April 9\textsuperscript{th} – 13\textsuperscript{th}
Austin, TX
101 - Ed-Fi Technology
That’s a Wrap!

Please fill out the Boot Camp Survey