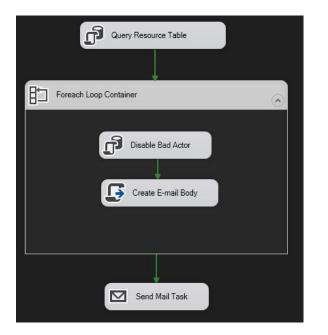
# Data Integration Made Easy

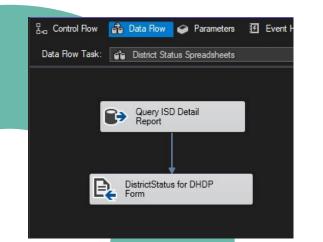
Tony Howard Sr Database Analyst Laura Caballero Sr Integrations Analyst



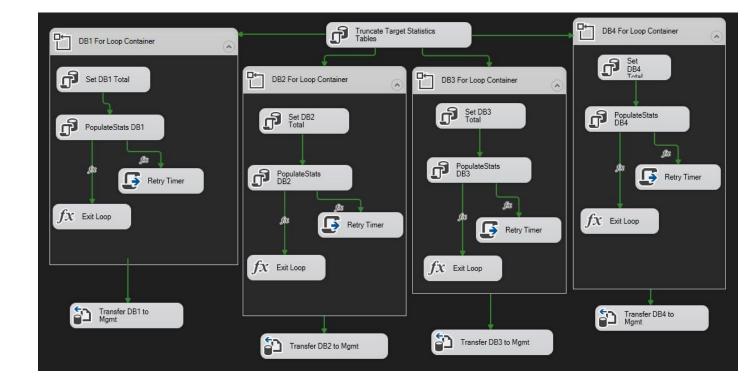
#### **KALAMAZOO RESA** INSPIRING EDUCATIONAL EXCELLENCE

### About me





- MiDataHub / KRESA Sr Database Analyst
   1.5 years
- Genesee ISD Student Data Applications Lead
   12 years (9 years as DHSS)



## What is MiDataHub?

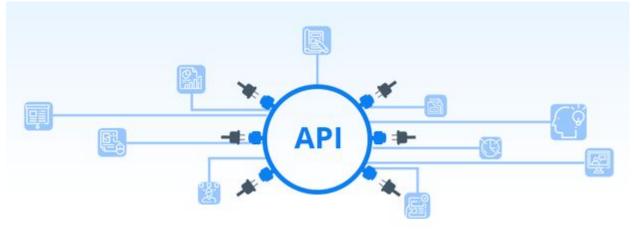
- Originally started in 2013 during the TRIG grant as Activity 6 Data Integration Project?
- Original goal to help districts get ready (from a data perspective) for online learning and online assessments (M-STEP)
- Additional goal to address the "proliferation of systems"
  - Districts have a large number of data systems, and that is growing over time
  - > These systems don't natively talk to each other, making it difficult to use data
- Selected the Ed-Fi Data Standard to build an "interoperable ecosystem"
- Created a cockpit application to make interoperability point and click easy for districts
- Owned, operated and supported by ISDs and districts in Michigan

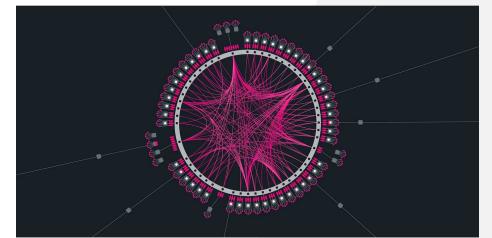




# Interoperability

**Interoperability** is the **seamless**, **secure**, and **controlled** exchange of data between applications. Data interoperability is a powerful tool to **transform teaching** and learning and **empower parents and students** with their own data. Solving the data interoperability challenges facing districts and schools is critical to giving teachers the information they need to succeed and to **enable innovation** in classroom practices to help guide students on the path to graduation.

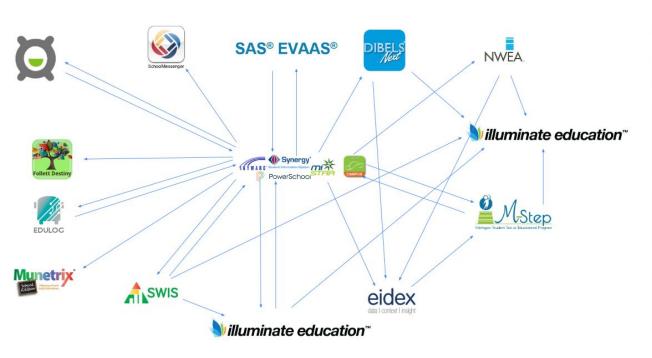


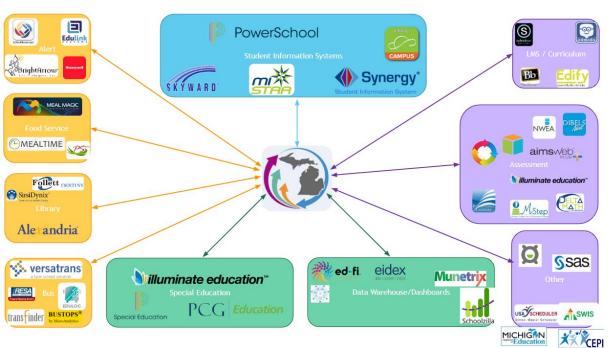




# How does that help me?

- Centralize where integrations are configured
- Fewer extracts to maintain
- Simplify activating connections





## How it's done



ckpit

Management Portal

**DataHub** 

Add New

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3

🕑 Systems

Read by Grade 3 Research

Partnership District Email Access

Partnership District Data Analysis

Transitional Kindergarten Study

Extended Benchmark Studies

Comprehensive Literacy Grant Evaluation

Benchmark Assessment Mandate Aggregation

Michigan Launch Pad Sites that tr org can access: MiAdminConsole MiDataHub Cockpit Org Can access: MiDataHub Cockpit Org Can access: MiDataHub Cockpit Org Can access: MiDataHub Cockpit	iDataHub Cockpit - ST	ty in org -	Manage Authorizations	Distr Current Sch SFTP Pr Integratio Distric	Region : Michigan Data ict Code : Anonymized Di District : MiDataHub Der ict Type : LEA Address : , . URL : ool Year : [2022-2023 (pc assword : 	istricts mo District, Id: 983, Co		istrict Folder	
			Name	Email		Authorizations		Ac	tions
Additional Sites:		a second second	Kevin Bullard	kevin.bullard@kresa.	org	District Superintend	lent	Edit	Delete
	ALGEBRA		Kevin Bullard	kevinrbullard@gmail.	com	Technical Contact District Superintence	lent	Edit	Delete
	NATION QAR	MI School Data	Windee Wagner	windee.wagner@kres	a.org	Technical Contact		Edit	Delete
#GoOpen Michigan EduPaths MAISA Events	Math Nation MI Math & Science	WWW.mischooldata.org	Dirk Bradley	Dirk.bradly@kresa.or	g	Technical Contact		Edit	Delete
Professional Portal Learning Catalog Wichigan Virtual MiServiceDesk SAS EVAAS	Leadership Network		Inbound Int (show • Add Integration		Outbound Inte (show all • Add Integration			ystem: i-Rea ystem: DRC essments 1 se: Eidex Ins halytics: Exter udies 1	ady 1 Smarter sights 1
1EdTech Certifications         Michigan Data Hub has 1 certifications for this product.         v6         Cockpit Application v6 has completed conformance testing for the following 1E	EdTech Standards								
OneRoster 1.1 Certified on 2024-06-13 • Registration Number: IMSM2mb2024W3 OneRoster 1.1 Details:     e REST Data Provider Rostering Core	1			-					

Inventory - Reports - Utilities - MSDS - Features -

Manage District: MiDataHub Demo District

Agreements -

# MiLaunchpad

- Federated Single Sign-On Ability for districts to connect (federate) their
   AD, Google, Okta or other logins. This allows district staff to sign in with an account they are familiar with, reducing the amount of login issues, and making it easier for district users to access their systems.
- MiLaunchpad In conjunction with the SSO, a user can access the launchpad and see other applications they have access to. For SSO enabled apps, they simply click on the application and don't need to sign in again.



#### **C**EduPaths

# **Cockpit Application**

Agreements - In	wentory - Repo	orts + Utilities +	MSDS - Features -	· · · · · ·	
			District	•	
vianage Dist	rict: MiData	aHub Demo [			
	ISD/Inter	and the second	n : Michigan Data Hub le : Anonymized Distric		
				District, Id: 983, Code: 900014	
		District Typ Addres			
		UR	L:		
		Current School Yea SFTP Passwor	ar : 2022-2023 (popula	ated) 🗸	
		3FTP Passwor	a :	۲	District Folder
		Integration Serve			
		District Statu	is: Active 🗸		
			Submit Conor		
			Submit Cance		
Manage Authoriz	ations				
New Authorization					
Name	Email			uthorizations	Actions
Kevin		kresa.org	D	listrict Superintendent	Edit
Kevin		gmail.com		echnical Contact	Edit
TO VIII			D	listrict Superintendent	
rovin					
Winde		@kresa.org	Te	echnical Contact	Edit
		@kresa.org esa.org		echnical Contact echnical Contact	Edit
Winde					
Winde Dirk B	nd Integrations	esa.org	Te Outbound Integrat	echnical Contact	Edit
Winde Dirk B	(show all)	esa.org	Te Outbound Integrat (show all)	echnical Contact tions AF	Edit PI Integrations (show all)
Winde Dirk B	(show all)	esa.org	Te Outbound Integrat	echnical Contact tions AF • Student I Campus	Edit PI Integrations (show all) nformation System: In 1
Winde Dirk B	(show all)	esa.org	Te Outbound Integrat (show all)	echnical Contact tions AF • Student I Campus • Assessm • Assessm	Edit PI Integrations (show all) nformation System: In 1 ent System: I-Ready 1 ent System: DRC Sm
Winde Dirk B	(show all)	esa.org	Te Outbound Integrat (show all)	echnical Contact tions AF • Student I Campus • Assessm • Assessm Balanced	Edit I Integrations (show all)

**Cockpit application** – allows districts to create integrations and manage everything MiDataHub related.

Each district has their own ODS for each school year that they can fully manage, including:

- Manage Integrations \*
- Manage Access \*
- Run Reports and Utilities \*
- Agreements \*
- MSDS \*

Delete

- Features \*
- and more \*

# **Inbound Integrations**

- Acadience CSV Assessment Load
- aimsWebPlus CSV Assessment Load
- NWEA Data Load Ed-Fi XML
- Renaissance STAR CSV Assessment Load
- SWIS CSV Referral Data Load

Import in Progress

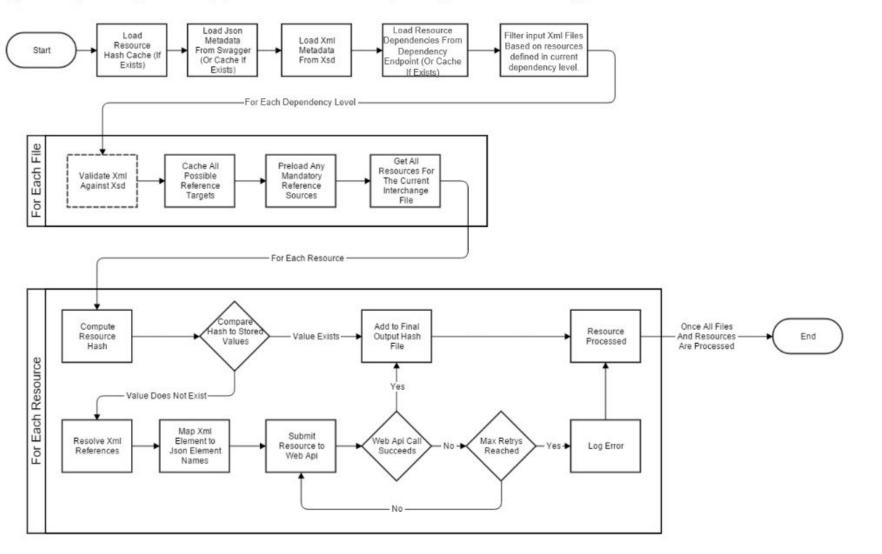
#### Inbound Integrations (show all)

- Assessment System: Acadience Reading Benchmark 1 (current)
- Assessment System: Measures for Academic Progress [MAP] Distributed 2 (current)
- Add Integration



### How inbounds work?

The general design of the application is a pipeline that takes XML files as input. The pipeline has the following general flow:





# **Outbound Integrations**

+ destination

- MiLearn Authorizations and Sections CSV Export
- Student State Assessment Export
- SWIS CSV Referral Data Export
- SWIS CSV Staff and Student Roster Export

	1	 	
/			
			-

Destinations			
- Destination 1			
Status: Active 🗸	Delivery Type:	SFTP 🗸	
	Location Type:	O Local	
		Remote	
	SFTP:	sftp.myisd.org	Test Connection
	SFTP Port Number:	22	]
	Path:	/uploads/	]
	User ID:	my_datahub	]
	User Password:	password	۲
		User Password is required.	
	Compression Type:	O Compressed	
		Uncompressed	
	Output to root folder:		
	Output Folder Name:	qa_edfi	0
	Include Timestamp in output name:		-



#### Outbound Integrations (show all)

- External System: MiLEARN 1: MiLEARN-Authorizations Data (current)
- External System: MiLEARN 1: MiLEARN-Sections Data (current)
- State-Sourced System: Assessment Importer 1: Request Assessment for Students without Assessments (current)
- Add Integration

### **Custom Exports in MiDataHub**

Custom Exports allow access to various student data tables within MiDataHub through custom SQL queries.

Navigate to Reports > View Custom Exports

1. Select Query Tag Dropdown:

This dropdown contains a list of tags associated with various reports. You can think of each tag as a folder that holds a group of related reports, also known as an Export Set. 2. Add a New Export Set:

To create a new Export Set and add it to the Export Set grid, select a tag from the **Select Query Tag** dropdown then click the **Create Export Set** button. 3. Export Set Creation:

Clicking this will open the Export screen and create the Export Set. Once there, click **Save** at the bottom of the screen

System Type:	Behavior Tracking System
Vendor:	Other 🗸
System:	Other Behavior Tracking System - v1 🗸
Output Type:	Custom Export 🗸
Output:	Select 🗸
Year:	Assessment Queries
System Notes:	Combined Discipline Incident and Action Taken Summary
Query Timeout:	Data Quality
	Data Validation Queries
Destinations	Mode of Instruction
	Staff Detail Query
destination	SWIS
	SWIS DataLink Referral Extract
	SWIS DataLink Referral Extract QA



#### Custom Exports in MiDataHub, continued

4. Return to the Export Manager Screen: After saving, the system will return to the Export Manager screen, where you'll see the name of the newly created Export Set 5. Access the Export Set:

In the Export Set Name column on the left, click on the Export Set name

Export Mana	iger
Manage Export	Sets
Export Set Name	Date Created
23g MiKidsBackOnTrack	09/05/2024 05:53 PM
Assessments	Click on the Export Set Name to open the set of
Attendance	reports in that folder.
Behavior	10/04/2024 02:36 PM
Mode of Instruction	10/04/2024 12:08 PM



### **View Reports and Actions**

On the right side of the screen, under the Actions column, you'll see options for each report

Actions	
Delete	Download File for 2022-2023
Preview	/ Results

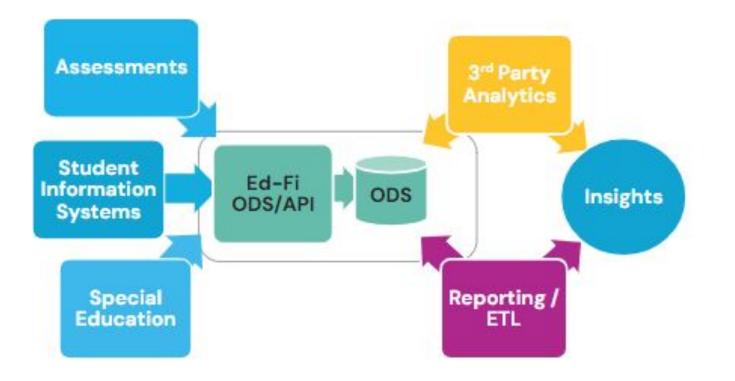
Link to documentation for Custom Exports in Michigan DataHub





#### **Ed-Fi API**

- Eliminates the challenges of coordinating file exports and transfers
- Data on demand



# What is an API

#### Swagger Petstore

1.0.0 OAS3

This is a sample Petstore server. You can find out more about Swagger at http://swagger.io or on irc.freenode.net, #swagger.

erms of service	
contact the developer	
pache 2.0	2
ind out more about Swagger	
ind out more about Swagger	

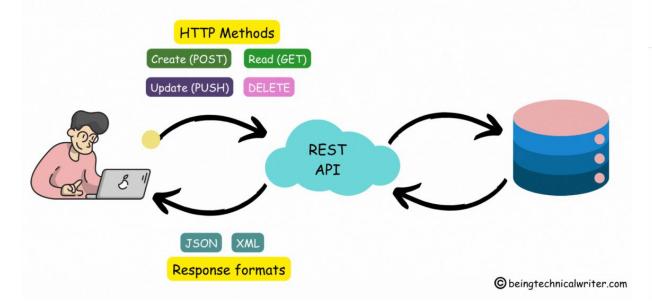
Servers		
https://petstore.swagger.io/v2	~	Authorize

et Eve	rything about your Pets	Find out more: http://swagger.io		
POST	/pet Add a new pet to the store	~ ≙ ←		
PUT	/pet Update an existing pet	~ ≞ ←		
GET	/pet/findByStatus Finds Pets by status	~ ≞ +		
	/pet/findByTags Finds Pets by tags	~ ≜ ←		
GET	<pre>/pet/{petId} Find pet by ID</pre>	~ ≙ ←		

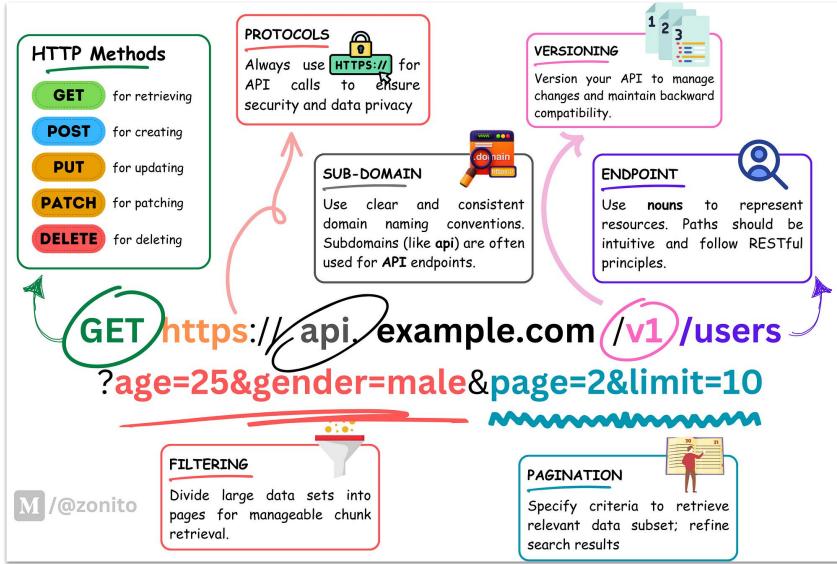


-

#### **RESTful APIs**

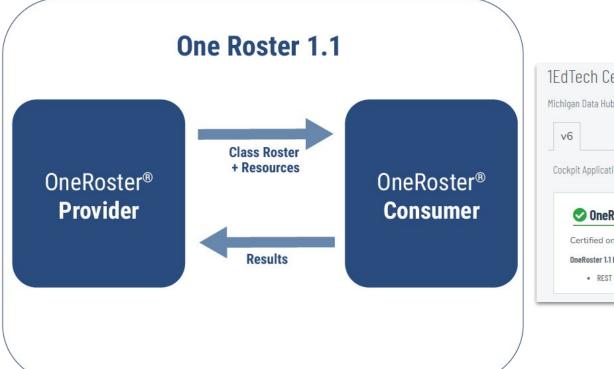


### **API Requests**





#### **OneRoster API**



ertifications	
b has 1 certifications for this product.	
	1EDTECH
ion v6 has completed conformance testing for the following 1EdTech Standards	CERTIFIED

#### OneRoster 1.1

Certified on 2024-06-13 • Registration Number: IMSM2mb2024W1

**OneRoster 1.1 Details:** 

REST Data Provider Rostering Core



# **OneRoster Mapping**

Another example. Let's dig into this one:

/Student/StudentSectionAssociation[@HomeroomIndicator = "1"]/Section[./CourseOffering/Session[@BeginDate <= current-date() and @EndDate >= current-date()]]/StaffSectionAssociation/Staff/@OneRosterIdentifier

1. Start with Student

2. Map to StudentSectionAssociation

i. Only include records that have a HomeroomIndicator field equal to 1

3. Map to Section

i. Only include Sections that have a CourseOffering that has a Session with a BeginDate < today and an EndDate >= today

4. Map to StaffSectionAssociation

5. Map to Staff

6. Return the Identifier field.

#### Add One Roster Mapping

Metadata Field Name:	HomeroomTeacher
Ods Field Path:	/Student/StudentSectionAssociation[@HomeroomIndicator = "1"]/ <u>Section[./CourseOffering/Session[@</u> BeginDate <= current- <u>date()</u> and @EndDate >= current- <u>date()]]/StaffSectionAssociation</u> /Staff/@OneRosterIdentifier
One Roster Field:	Student ~



# **OneRoster Usernames**

#### Manage API Integration

	mike.wilson@schooldomain.org
gration	Edit Application Username
System Type: Assessment System	Name: OneRoster Sample Integration Usernames
Vendor: Pearson	Student (filled) Parent (filled) Staff
System : AIMSWebPlus	
System Notes :	Variables: StudentId FirstName FirstInitial LastName LastInitial EmailAddress
Authorization URL : https://apihub.midatahub.org/ods/oauth	Pattern: {EmailAddress}
API Endpoint URL : https://apihub.midatahub.org/ods/data/v3	Email: O Primary email address  Filter to @ [schooldomain.org] email address
Namespace Prefix : uri://pearsonassessments.com	Exclude domain name
Key :	Preview: John.doe susan.jones
Secret : ********** 💿 Test API Connection Generate New	mike.wilson
	Status: Active
Profile : None	Save Delete Cancel
Status : Active  Permit Access to OneRoster API :  Fdit - Accounts for OneRoster Sample In	togration Licomamos
One Roster Authorization URL : https://apihub.midatahub.org/im	MICHIGAN
One Roster API Endpoint URL : https://apihub.midatahub.org/im	Is/oneroster/v1p1
Select Available Scopes : RosterCore_ReadOnly Roster_ReadOnly RosterDemographics_ReadOnly Resource_ReadOnly	ns/oneroster/v1p1
Year : 2020-2021 (populated) ✓	

Edit Application Username

Name:

Student (filled)

Variables:

Pattern:

Email:

Preview:

OneRoster Sample Integration Usernames

O Primary email address 

 Filter to @ schooldomain.org

FirstInitial LastName LastInitial EmailAddress

Exclude domain name

email address

Parent (filled) Staff

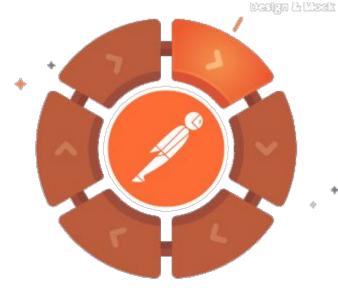
tudentId FirstName

john.doe@schooldomain.org

susan.jones@schooldomain.org

{EmailAddress}

### How do I API?



- ✤ Postman
- Ed-Fi Academy (trainings / videos)
- Using the Ed-Fi API
- MiDataHub Swagger

Language	Framework
с	LibCurl
C#	HttpClient
C#	RestSharp
cURL	cURL
Dart	Dart
Go	http package
HTTP	(Raw HTTP request)
Java	OkHttp
Java	Unirest
JavaScript	Fetch
JavaScript	jQuery
JavaScript	XHR
NodeJS	Axios
NodeJS	Native
NodeJS	Request
NodeJS	Unirest
Objective-C	NSURLSession
OCaml	Cohttp
PHP	cURL
PHP	Guzzle

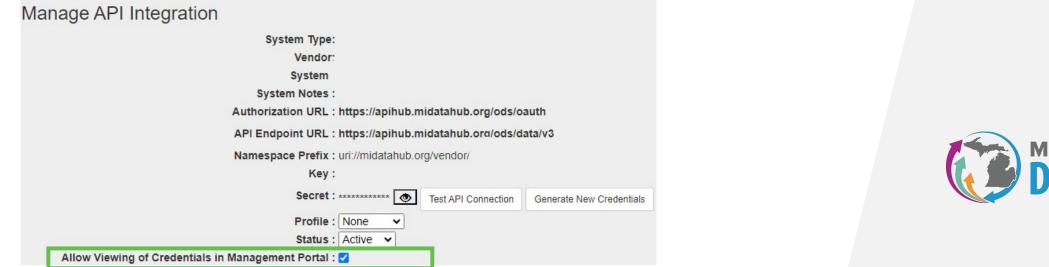
РНР	Http_Request2
РНР	pecl_http
PowerShell	RestMethod
Python	http.client (Python 3)
Python	Requests
R	httr
R	RCurl
Ruby	NET::Http
Shell	Httpie
Shell	wget
Swift	URLSession

### **Vendor Management Portal**

Management Portal

MICHIGAN DataHub

Export





# Things you may get asked about

- Benchmark Assessment
  - MiDataHub/MDE Deadline 12/16/2024 (not flexible)
- MiKidsBackOnTrack 23g
  - Enable data pull integration
- Renewing SSO Federation
- What can we integrate with?
- Newsletter Sign Up
  - Past Newsletters on our home page <u>www.midatahub.org</u>

#### Benchmark Assessment Legislation Status

#### Links

Benchmark Assessment Legislation Readiness Dashboard Checklist

Checks

- Required
- Integrations in MiDataHub cockpit

SIS - 1 passed

O Student Information System - Found SIS integrations: PowerSchool

D

#### O Assessments - 1 passed

O At least 1 Applicable MDE Identified Assessment enabled - Assessment Integrations: i-Ready

Benchmark Assessment Legislation - 1 passed

O Benchmark Assessment Legislation - Found integration(s): Extended Benchmark Studies

#### Data Readiness Status-Current Year

O Data Readiness Status - 1 passed - 9 info

O Students With Assessment Scores without UIC - All Student Assessment Score results have a UIC Associated

3 Students With NWEA Assessments, Beginning of Year - NWEA Assessment integration not configured

Students With NWEA Assessments, End of Year - NWEA Assessment integration not configured

3 Students With Renaissance Star Assessments, Beginning of Year - Star integration not configured

Students With Renaissance Star Assessments, End of Year - Star integration not configured

Students With i-Ready Assessments, Beginning of Year - 482 i-Ready assessment records exist for the 521 students in grades where the i-Ready assessment was given. - Assessment records by grade level: 00 - 51, 01 - 57, 02 - 56, 03 - 46, 04 - 51, 05 - 49, 06 - 50, 07 - 71, 08 - 51

• Students With i-Ready Assessments, End of Year - 433 i-Ready assessment records exist for the 521 students in grades where the i-Ready assessment was given. - Assessment records by grade level: 00 - 51, 01 - 56, 02 - 57, 03 - 46, 04 - 53, 05 - 47, 06 - 52, 07 - 69, 08 - 2

3 Students With DRC Assessments, Beginning of Year - DRC integration not configured

Students With DRC Assessments, End of Year - DRC integration not configured

Mode Of Instruction - | FULLY IN-PERSON: 1, 100%









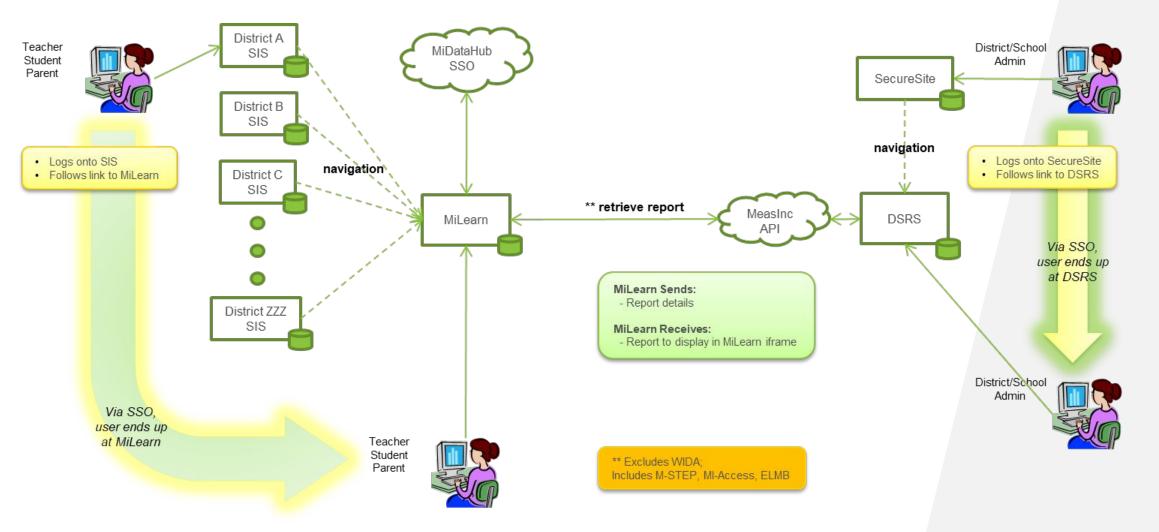
#### MiLearn



- Provide state assessment results online to students, parents, and educators
- Rostering data is updated nightly (Including schedule changes, enrollments, withdrawals)
- Transfer student state assessment results are available the next day
- Five years of assessment reports









#### **Supported Assessments**

#### Educator

- M-STEP
  - Student Roster
  - · Growth and Proficiency
  - Student Overview
  - Parent Report
- SAT
  - Student Roster
  - Growth and Proficiency
  - Individual Student Report
  - Parent Report

#### PSAT 8/9 for Grade 8

- Student Roster
- Growth and Proficiency
- Individual Student Report
- Parent Report

#### • PSAT 8/9 for Grade 9

- Student Roster
- Individual Student Report
- PSAT 10
  - Student Roster
  - Individual Student Report

- MI-Access Functional Independence
  - Student Roster
  - Individual Student Report
  - Growth and Performance Report
  - Parent Report
- MI-Access Participation
  - Student Roster
  - Individual Student Report
  - Parent Report
- MI-Access Supported Independence
  - Student Roster
  - Individual Student Report
  - Parent Report
- WIDA ACCESS for ELLs
  - Student Roster
  - School Frequency Student Detail
- WIDA Alternate ACCESS for ELLs
  - Student Roster
  - School Frequency
  - Student Detail
- Early Literacy and Mathematics Benchmarks Assessments
  - Student Roster
  - Early Literacy Domain Analysis
  - Individual Student Report



### **Supported Assessments**

#### Parent

#### • M-STEP

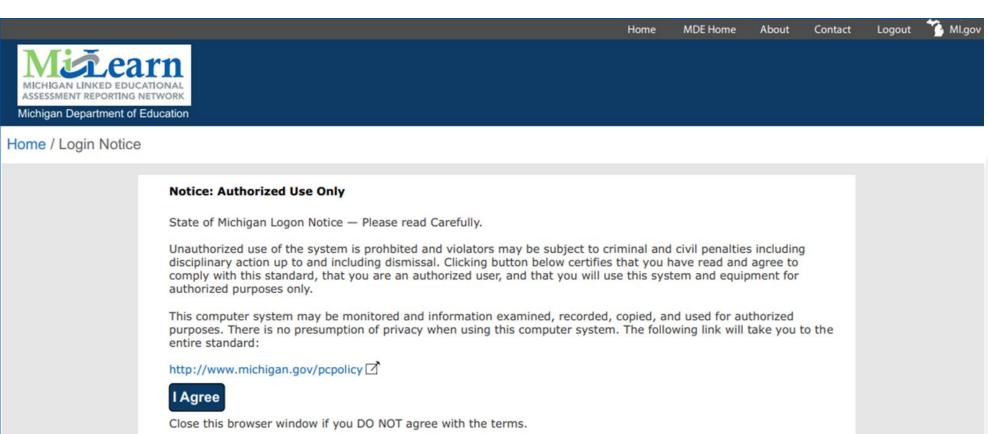
- Parent Report
- SAT
  - Individual Student Report
- PSAT 8/9 for Grade 8
  - Parent Report
- PSAT 8/9 for Grade 9
  - Individual Student Report
- PSAT 10
  - Individual Student Report
- MI-Access Functional Independence
  - Parent Report
- MI-Access Participation
  - Parent Report
- MI-Access Supported Independence
  - Parent Report
- WIDA ACCESS for ELLs
  - Student Detail
- WIDA Alternate ACCESS for ELLs
  - Student Detail
- · Early Literacy and Mathematics Benchmarks Assessments
  - Individual Student Report

#### Student

- M-STEP
   Parent Report
- SAT
  - Individual Student Report
- PSAT 8/9 for Grade 8
   Parent Report
- PSAT 8/9 for Grade 9
  - Individual Student Report
- PSAT 10
  - Individual Student Report
- WIDA ACCESS for ELLs
   Student Detail
- WIDA Alternate ACCESS for ELLs
  - Student Detail



### **User Interface**



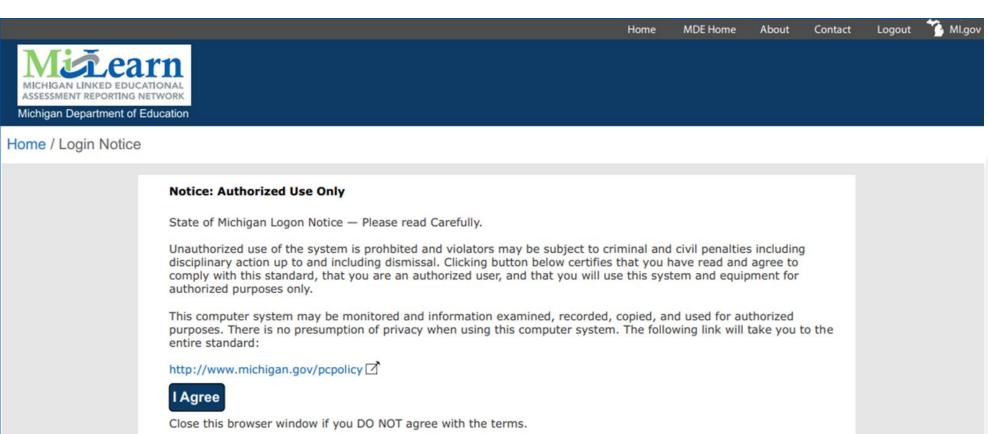


## **User Interface**

CHIGAN LINKED EDUCATI SESSMENT REPORTING NET chigan Department of Edu		DEBORAH HUBBEL
partment of Education se dent, parents, and educa	iOnal Assessment Reporting Network (MiLearn) is a Michigan rvice that delivers state assessment data electronically to tors directly through the district's Student Information System ily using the Michigan Data Hub data to reflect student	My Permissions Job Title(s), Access Level assignment(s), and Report permission(s) Your current job titles, access levels, and reports are the following: With the "Assistant Superintendent" Job Title at Birmingham Public Schools with "All schools in my district" access level, you have access to the following reports: • Early Literacy Domain Analysis • Early Literacy Student Detail • Tarly Literacy Student Detail 
etailed Reports St	udent Search	
noose an Assessment a	and Report	
Assessment Report	Choose an Assessment  Choose an Assessment M-STEP WIDA ACCESS for ELLS WIDA Alternate ACCESS for ELLS MI-Access FI	Instructions To begin, choose a test cycle and report from the boxes on the left. You will be able to configure the report below after you select it.
	MI-Access P	



### **User Interface**





#### **M-STEP Student Roster Report**



Reconfigure this Report & Related Reports -Help & Export -

#### Spring 2024 M-STEP – Student Roster Report

District School District School Teacher: < All Teachers | Class: < All Classes> | Grade: Seventh Grade | Performance Level: < All Levels> | Subject: English Language Arts

#### Grade 7 | English Language Arts

Entity Aggregation	No. Valid Tests	Mean Scale Score	Not Proficient (NP)	Partially Proficient (PP)	Proficient (P)	Advanced (A)			Proficienc	y Summary		
State-All Students	99858	1690	34.7%	27.3%	27.7%	10.3%						
District-All Students	287	1692	35.9%	20.6%	28.9%	14.8%	_		× –		-	
Rostered Students	283	1693	35.7%	20.5%	29.0%	14.8%	0	_			X	

#### **Rostered Students**

						Growth	n Target	Overall Scale Score [Gray] - standard error								
Students 🔶 (Total = 283)		Scale Score	Standard Error	Performance Level	SGP	A GP 🚭	Ti meframe	1618-1678 Not Proficient (NP)	1679-1699 Partially Proficient (PP)	1700-1725 Proficient (P)	1726-1753 Advanced (A)	Reading	Writing	Listening	Research 🖨	Passage-based Writing PE / PP
HICL AARDOA IN	0	1664	±7	NP	50	66	3	_				Below	Below	Below	Below	Insufficien
ACCOMPANY INCOMPANY	θ	1718	±7	P	NA	NA	NA	-	-		)	At/Near	At/Near	Above	At/Near	1/4
ASAMS YOUR CRACK	0	1725	±7	P	72	14	1	<b></b>	<u>,                                     </u>			Above	Above	At/Near	Above	2/4
ADARCES IS NO. 8	θ	1717	±7	P	61	20	1	-	×			Above	At/Near	At/Near	At/Near	3/4
ADMINISTRATION COMPANY	θ	1691	±7	PP	3	15	1	6		<b>+</b>		At/Near	At/Near	At/Near	At/Near	1/4
ACCENTER INCOME IN	θ	1652	±9	NP	NA	NA	NA			_		Below	Below	Below	Below	NA
NINE CRUER	θ	1681	±7	PP	15	25	3	6	5	<u>&gt;</u>		At/Near	Below	At/Near	At/Near	2/4
Calence Sections		1626	±13	NP	1	71	3		_	_		(Below)	(Below)	(Below)	(Below)	Insufficien



#### **MiLearn Contact Info**

PriceJ2@Michigan.gov DavisT54@Michigan.gov MDE-OEAA@Michigan.gov



# Thank you!

Tony Howard: <a href="mailto:tony.howard@kresa.org">tony.howard@kresa.org</a>

Laura Caballero: <u>laura.caballero@kresa.org</u>

