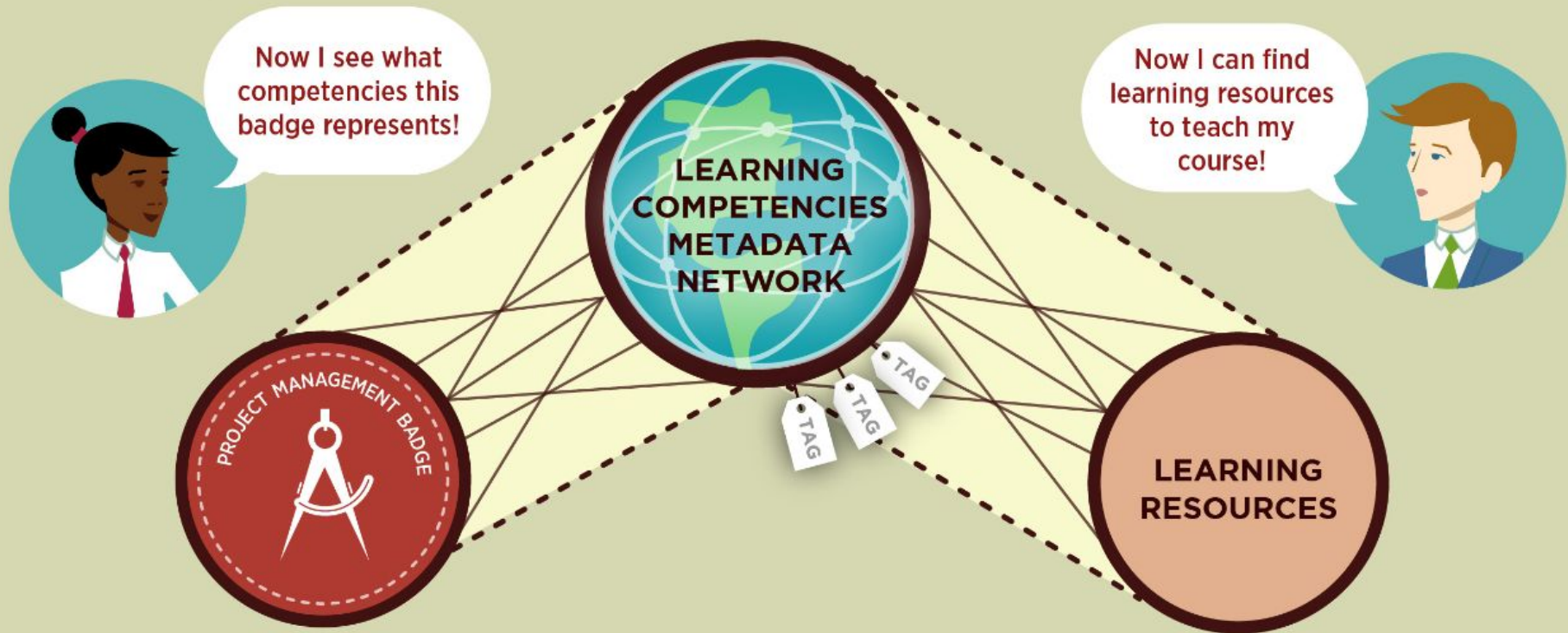


Ed 3.0: The Internet of Education

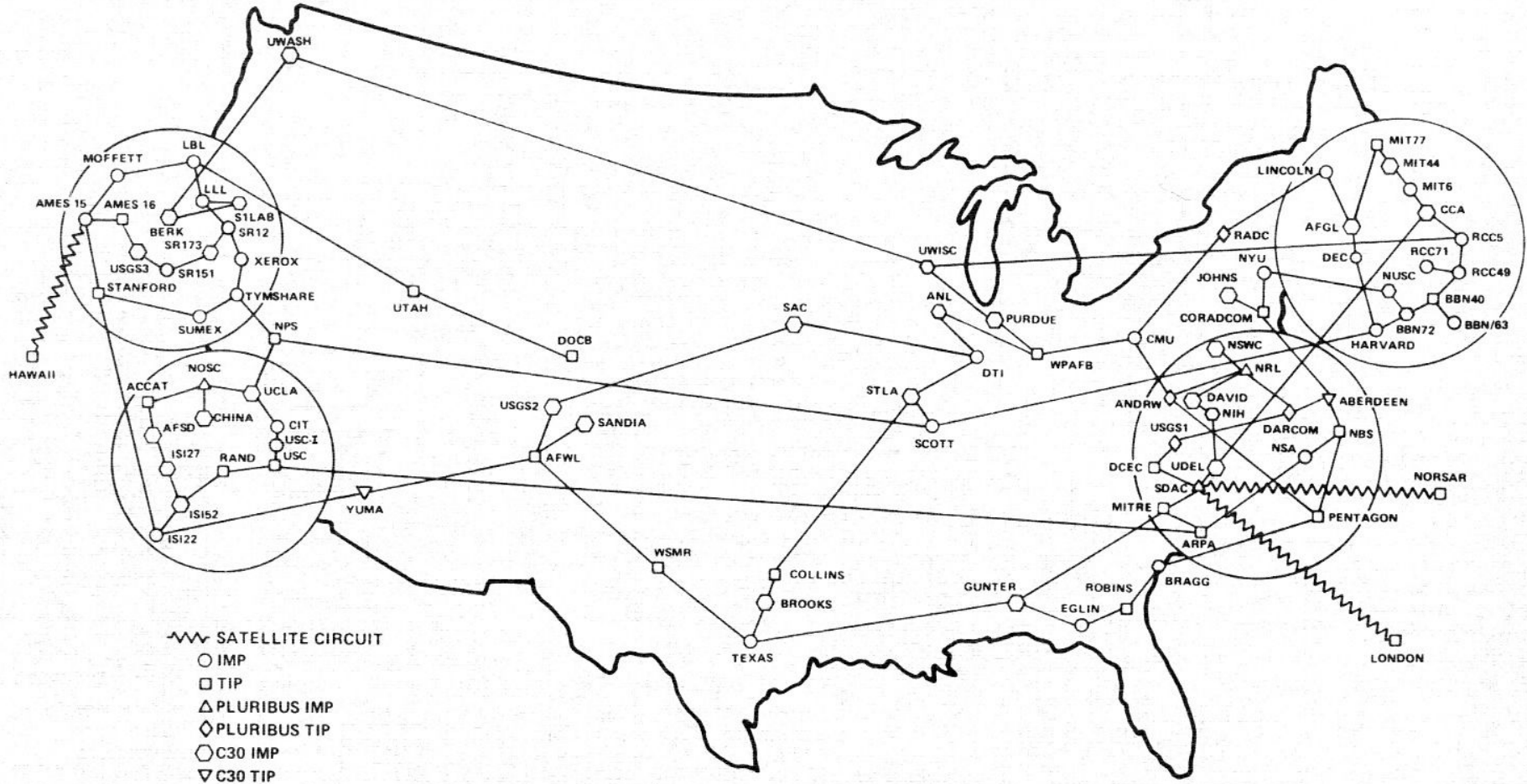


International open standards and shared utilities that enable personalized, competency-based learning at the scale of the Internet

The Internet

ARPANET before it became the Internet

ARPANET GEOGRAPHIC MAP, FEBRUARY 1982



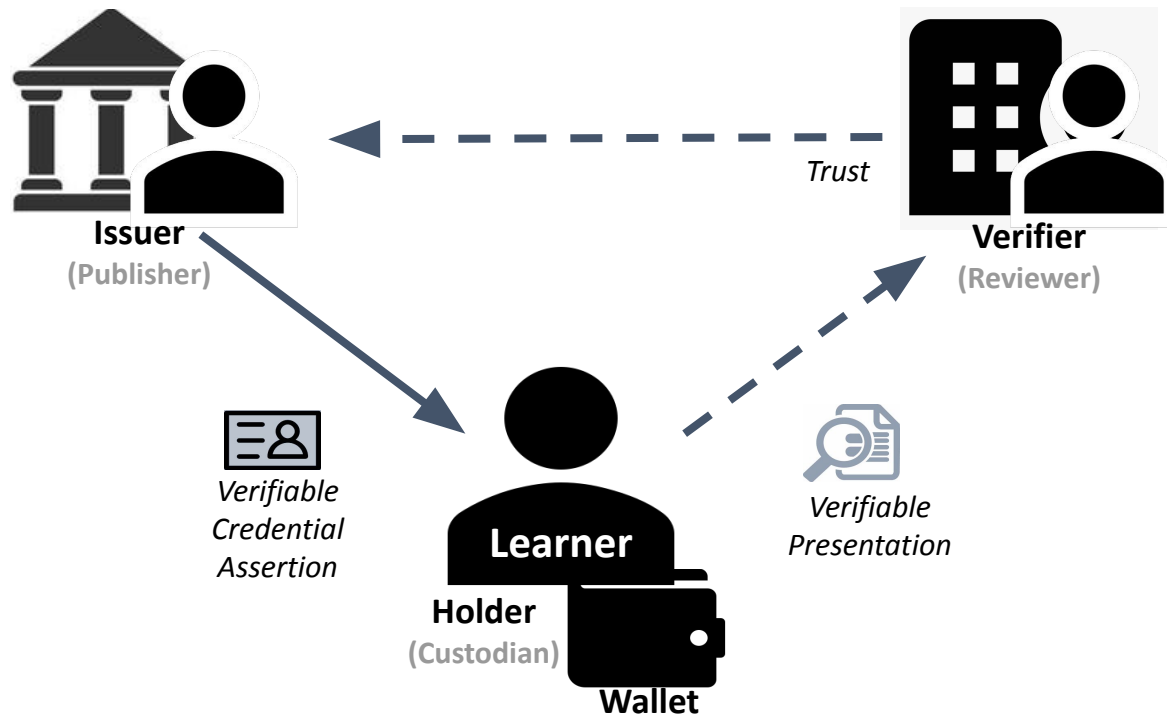
The Internet of Education

Any time, any where, any place, any pace, personalized, competency-based learning.



The Internet of Education

Self-sovereign identity and access control at the scale of the Internet



Core Requirements:

- #1 Personal Data Control
- #2 Exchangeable Across Networks

Core Use Scenario:

*When a learner achieves an outcome, an **Issuer** asserts a cryptographically signed credential that can be held in any standard digital wallet app where the **Holder** can control verifiable presentation to a **Reviewer** in any jurisdiction without having the need for a data sharing agreement with the **Issuer**.*

A vision of the near future

- in which people's skills become machine-readable data
- that can be held and controlled from a digital wallet app
- and exchanged like currency
- for learning and employment opportunities
- on the open Internet
- the way goods and services are exchanged today.



Achievement Assertions

A common conceptual model for IMS CLR, IEEE ILR, and W3C Edu

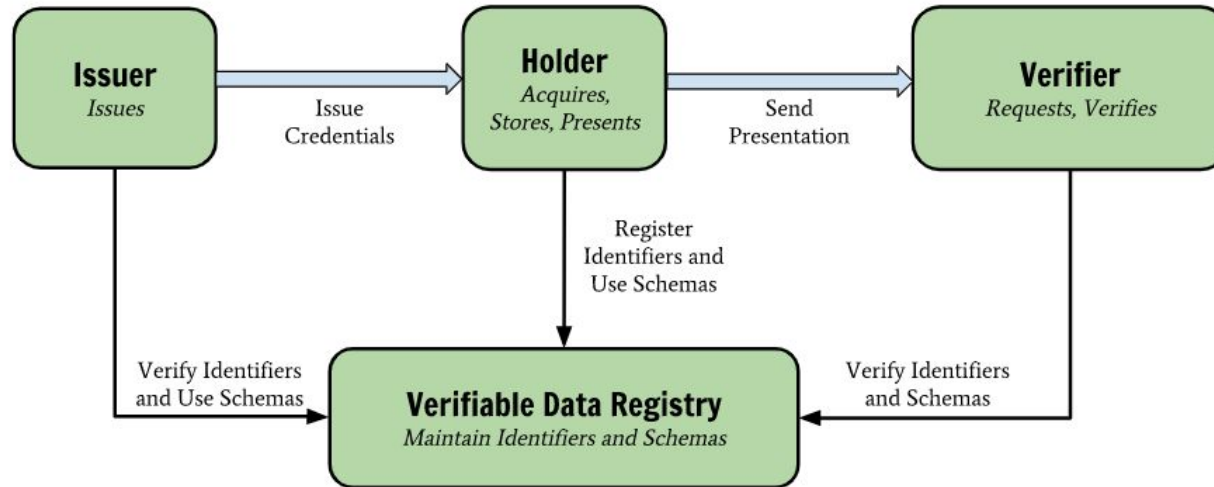
Learner Record Set	
Learner Record	
Assertion	Achievement
Learner (PII)	> CASE/RSD/ESCO Skill
Issuer	> CTDL Credential
Evidence/Time	> OB BadgeClass
Verification	Achievement Level
Verification	

I,	assert that	demonstrated	at	with
Issuer	Learner	Achievement	Level	Evidence

1. **Learner Record.** In a learner record, the core record is a distinct **assertion/claim** that could have **evidence** and/or an **achievement** to a **level** described in a **rubric**.
2. **Achievement (Description).** An achievement can be described as a shared record that can be set as a goal and/or accomplished by more than one learner and, therefore, be compared and exchanged. **Rubrics** can be used to define levels associated with the achievement definition (e.g. “approaches,” “meets,” “exceeds”).
3. **Assertion/claim.** The attestation made by an Issuer about a Learner regarding an Achievement. The Assertion may also include associated evidence, results, or other metadata regarding a specific Achievement.
4. **Evidence.** Information supporting the issuance of an assertion such as URL to an artifact produced by the Learner. Evidence can be curated into **portfolios** and used to generate **assertions**.
5. **Learner Record Sets.** Sets of achievement assertions can be grouped into immutable **transcripts** and/or can be curated into learner record sets.
6. **Context.** Learner records exist as linked data related to other learner records and sets and aligned with other relevant objects like CASE and CTDL.

Assertion Verification

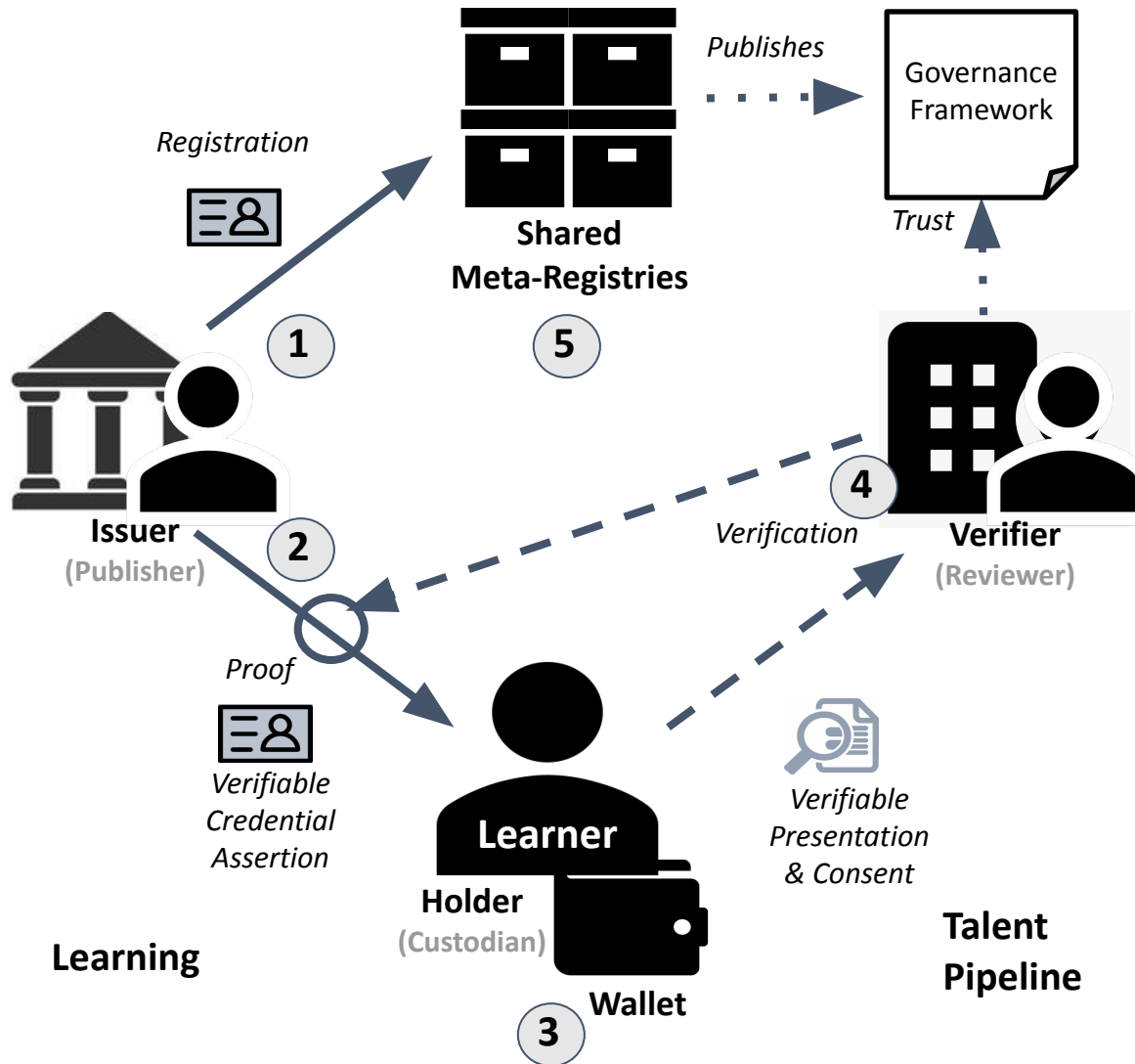
Both single, simple, badge assertions and more complex sets of assertions



1. **Issuer.** The organization/individual making the assertion.
2. **Holder.** The subject of the assertion and/or custodial parent/guardian.
3. **Verifier.** An organization/individual consuming information from a verified presentation.
4. **Verifiable Data Registry.** Network of networks shared utilities used to cross schemas for skills, trust, achievement description, resources, distributed ledger, credentials and revocatoins.

IEEE Integrated Learner Record (ILR)

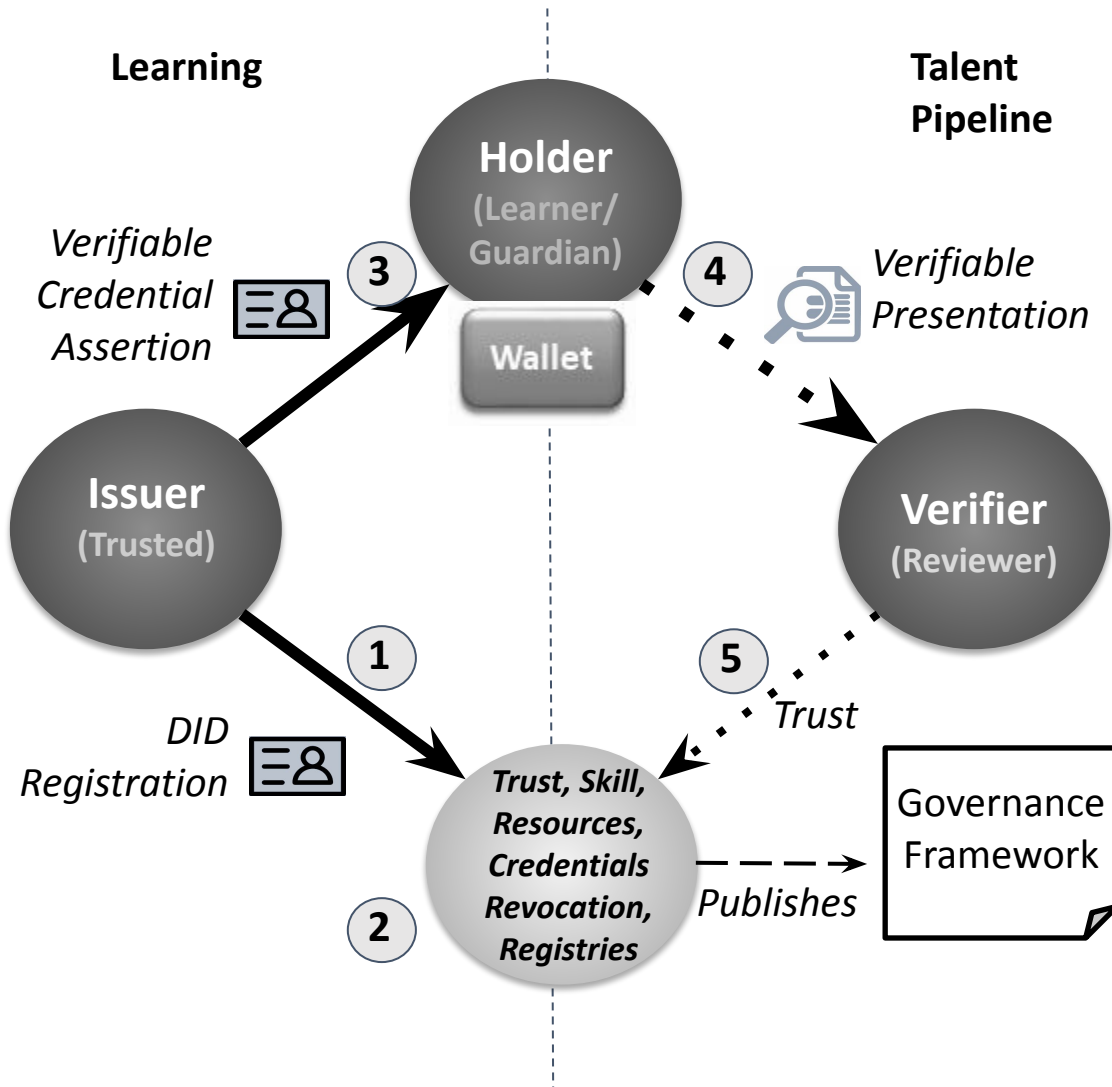
Recommended practices for integration of open standards to support IoE ecosystems



1. **Achievement Assertion Tool** – Services that enable instructor/evaluators to assert that a learner has achieved a skill, credential, or other outcome (e.g. PESCE, CLR, OB, Europass).
2. **Credential Publisher** - Services that enable achievement assertions to be wrapped in credentials that are cryptographically signed onto distributed ledgers for verification from requestors (e.g. W3C VC, T3 Wrapper)
3. **Digital Wallet** – Services that enable learners and their adult guardians to subscribe, curate, and control access to achievement assertions and other credentials creating a presentation that is shared with a verifying party or Universal Validator.
4. **Universal Validator/Requestor** - Presentation services that enable credential requestors to view and validate credentials (W3C)
5. **Shared Meta-Registries:**
 - a. Skill Crosswalk Service (e.g. OCFC)
 - b. Trust Registry Services
 - c. Accreditation Services
 - d. Resource Services
 - e. Distributed Ledger
 - f. Credential Services
 - g. Revocation Services

The Internet of Education

Global peer-to-peer trust and exchangeable, verifiable, skill-based, digital credentials



Core Concepts:

- 1. Trust.** Education providers (Issuers) can register Distributed Identities (DIDs) in a broad range of trust infrastructure environments.
- 2. Skills.** Education providers (Issuers) make course objectives, state academic standards, and other competency and credential frameworks available as machine-readable, linked data with registered crosswalks to other standards.
- 3. Credentials.** Trusted Issuers can publish Verifiable Credentials (VCs), cryptographically signed to distributed ledgers that ensure mathematically that no byte has been altered. These signed "assertions" can mix granular skill mastery and scaled score data with aggregated accomplishments like diplomas from accredited institutions or industry-recognized credentials. Accreditation and revocation may be managed as services.
- 4. Control.** Learners and their adult guardians can subscribe to trusted, verifiable assertions in their digital wallet mobile apps and curate presentations of selected records for designated tutors, teachers, admission offices, employers, and other opportunity providers.
- 5. Truth.** Downstream education and employment opportunity providers with access to these records can verify that they are trusted, unaltered, and mapped to intended use. If the "Verifiers" trusts the Trust Infrastructure Registries and confirm that the credential has not been revoked, they can trust that the credential is true and map it through the skill crosswalk service to the opportunity to be provided.

The Internet of Education

Any time, any where, any place, any pace, personalized, competency-based learning.

Use case: Diplomas management

Enabling mobility for both: students & students' records

Issuer (Ed.Institution)

- Has at least one decentralized identifier
- Has at least one Verifiable_ID (eSealed with a Qualified eSeal, using a QeSeal-certificate issued by a QTSP)
- Issues and signs (eSeal) the verifiable credential to citizen that holds a self sovereign identity with the serialized standardized content defined by Europass EDCI data model

Holder(Citizen)

- Holds his self-sovereign identity, the verifiable credential issued by the issuer, a Verifiable_ID
- Can verify the identity of all the actors (issuer and the identity of the party relying on the information)
- Can be sure with whom he/she exchanges, and that the information will be only shared with the recipient of the credential
- Multiple identities of students or identity credentials are supported (national identities, student/university identities, etc.)

Verifier(Relying party)

- Has a decentralized identifier
- Interoperability of data records is guaranteed
- Can verify the issuer, the contents, the holder, the on-line validity of the credential
- No need of a 3rd party facility to verify the data



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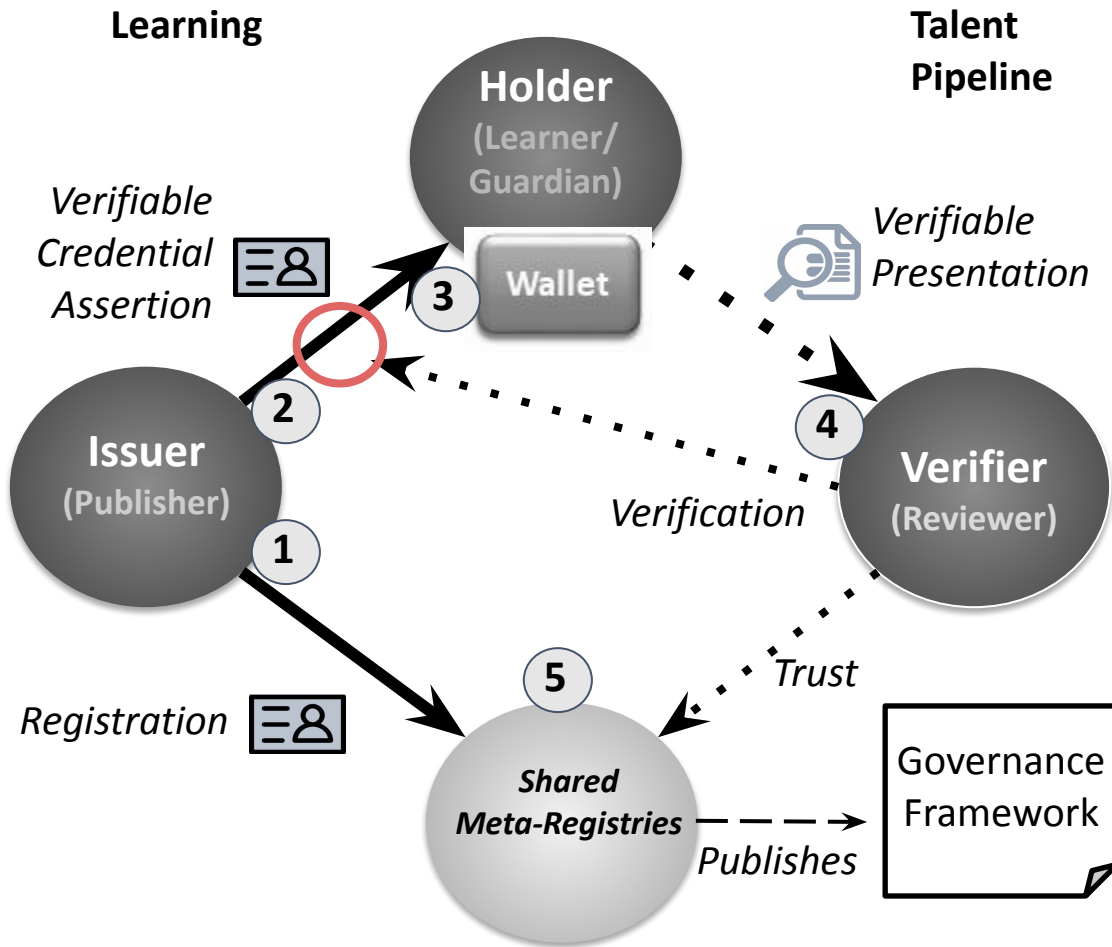
Trust

Publishes



IEEE Integrated Learner Record (ILR)

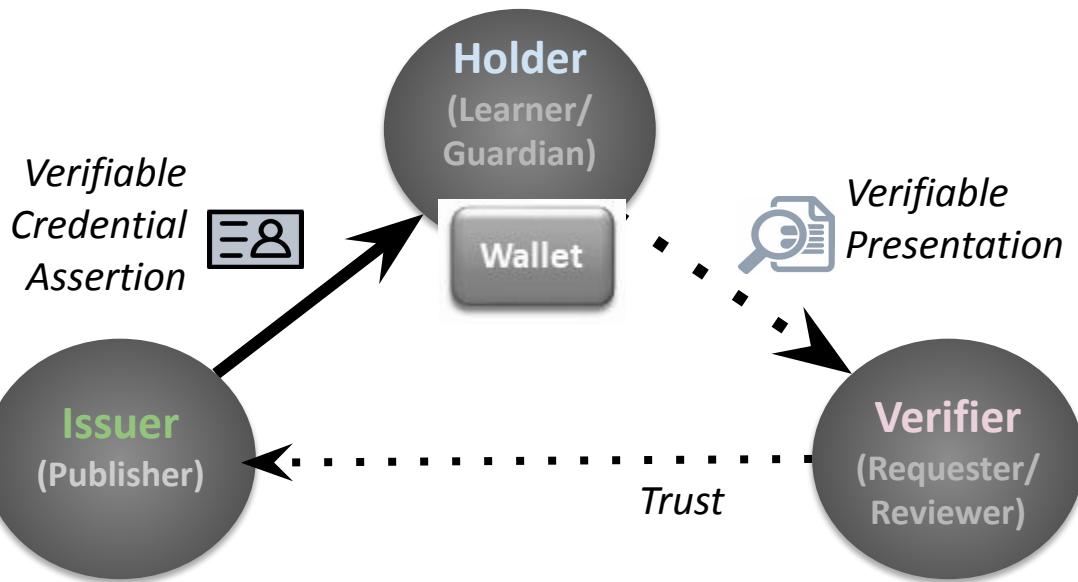
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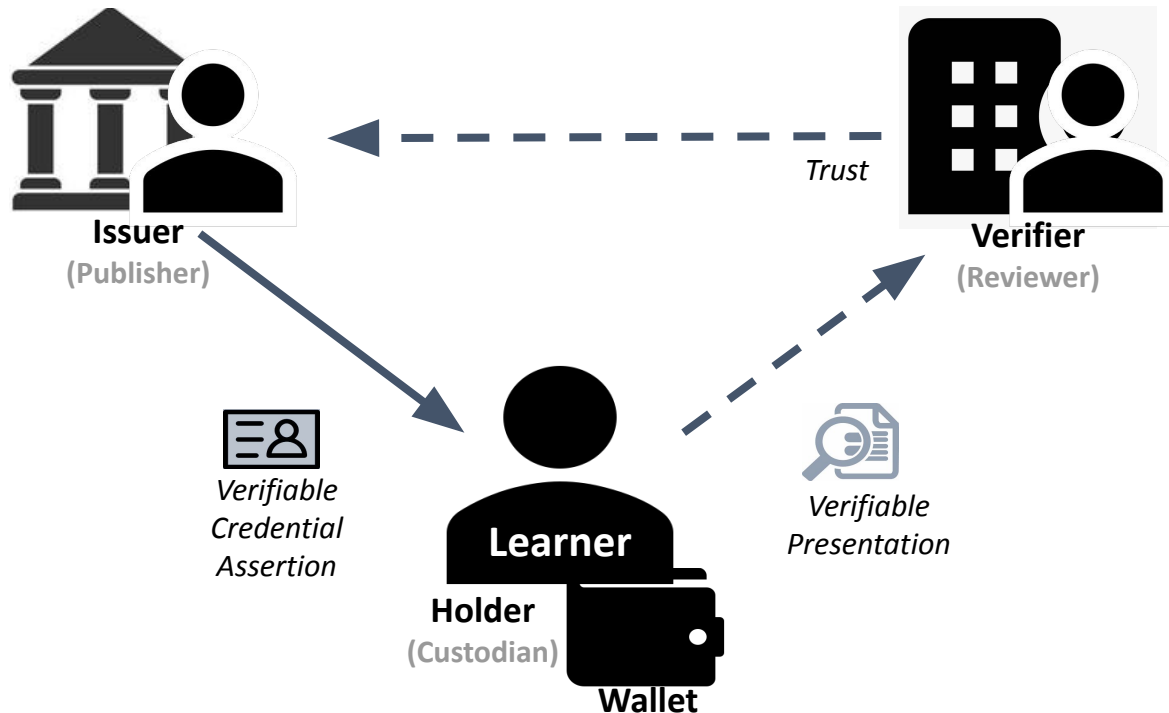
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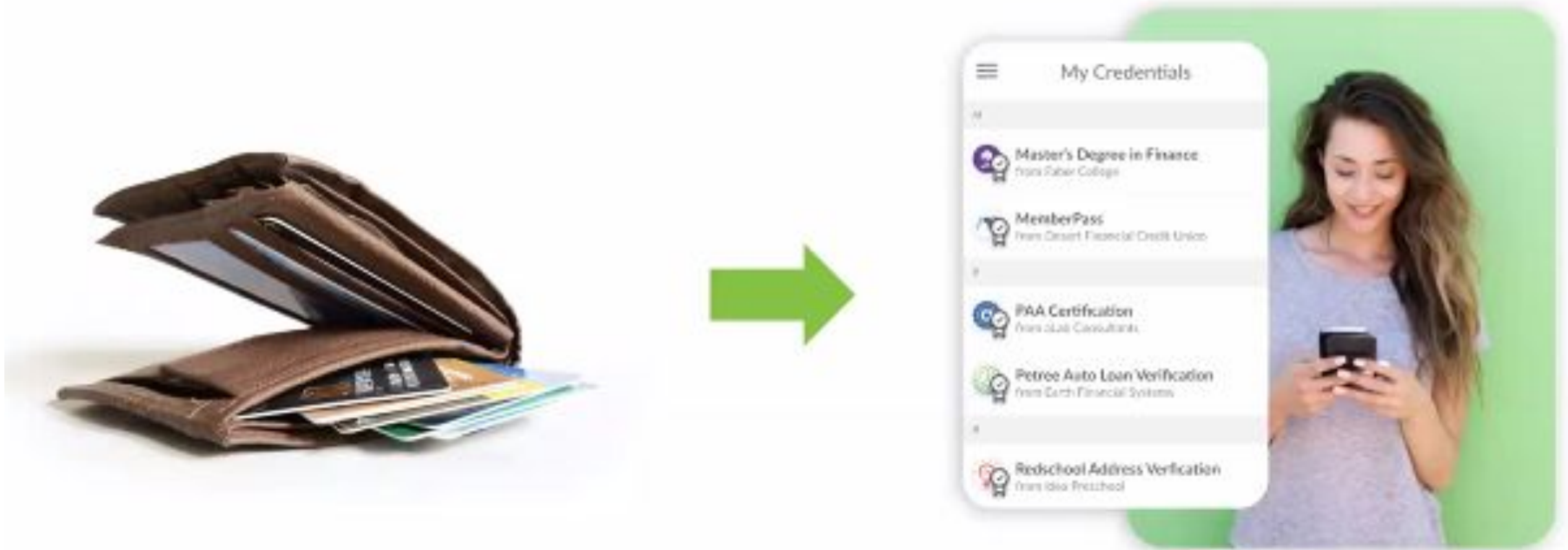


IEEE Integrated Learner Record (ILR)

Recommended practices for integration of open standards to support IoE ecosystems



Putting lifelong learning records in a digital wallet



Self-Sovereign Identity, Access, and Control



COVID Passport

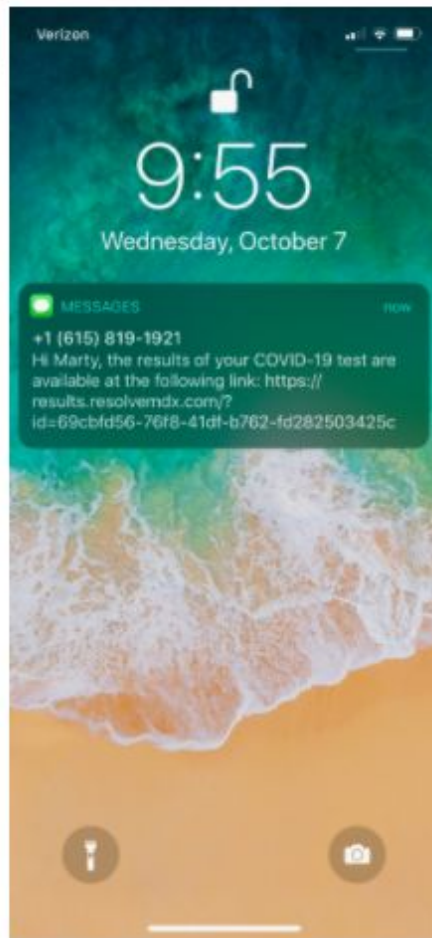
Personal data control of verifiable COVID personal data



Collected
9/28/2020
Received
9/28/2020
Reported
9/29/2020
Source
Nasal Swab

Tested For	Result
SARS-CoV-2 PCR	NEGATIVE

This test was developed by ThermoFisher, its performance characteristics determined by Resolve Molecular Diagnostics, LLC. This test has not been FDA cleared or approved. This test has been authorized by FDA under an Emergency Use Authorization (EUA). This test has been validated in accordance with the FDA's Guidance Document (Policy for Diagnostics Testing in Laboratories Certified to Perform High Complexity Testing under CLIA prior to Emergency Use Authorization for Coronavirus Disease-2019 during the Public Health Emergency) issued on February 29th, 2020. FDA independent review of this validation is pending. This test is only authorized for the duration of time the declaration that circumstances exist justifying the authorization of the emergency use of in vitro diagnostic tests for detection of SARS-CoV-2 virus and/or diagnosis of COVID-19 infection under section 564(b)(1) of the Act, 21 U.S.C. 360bbb3(b)(1), unless the authorization is terminated or revoked sooner.



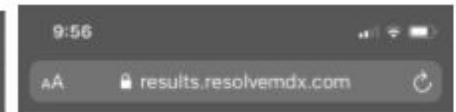
Patient Results Portal

Login to view, download, and email your test results

Sign in

If you believe you have received this message by mistake, please ignore.

© 2020 Resolve Molecular Diagnostics



[Download PDF](#) | [Email](#) | [Logout](#)

SARS-CoV-2 PCR:
NEGATIVE

Patient Information

Reed, Marty
555 Main Street
Franklin, TN 37064
615-207-7590

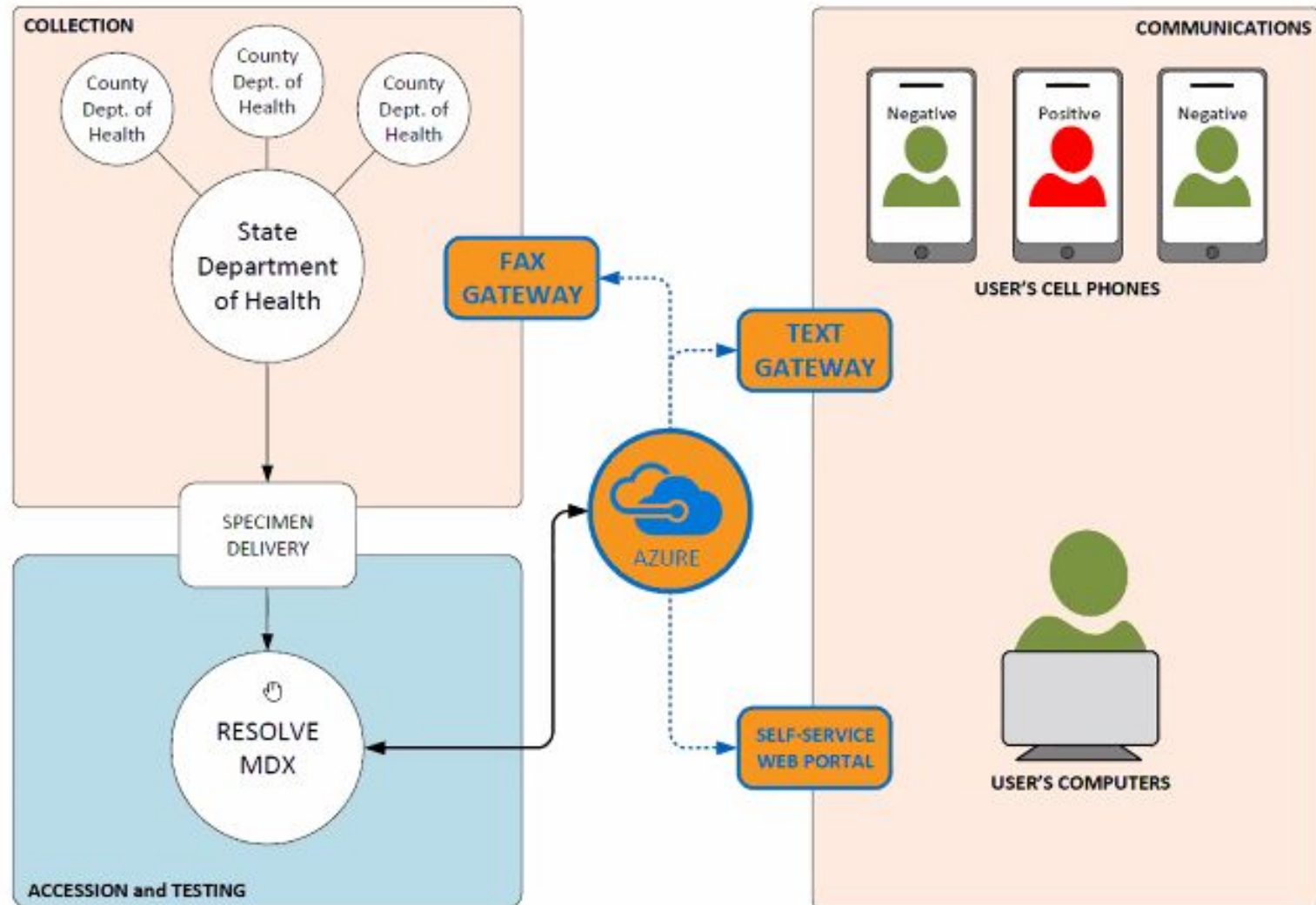
DOB
1/11/1977

Sex
M

Ethnicity
WHITE

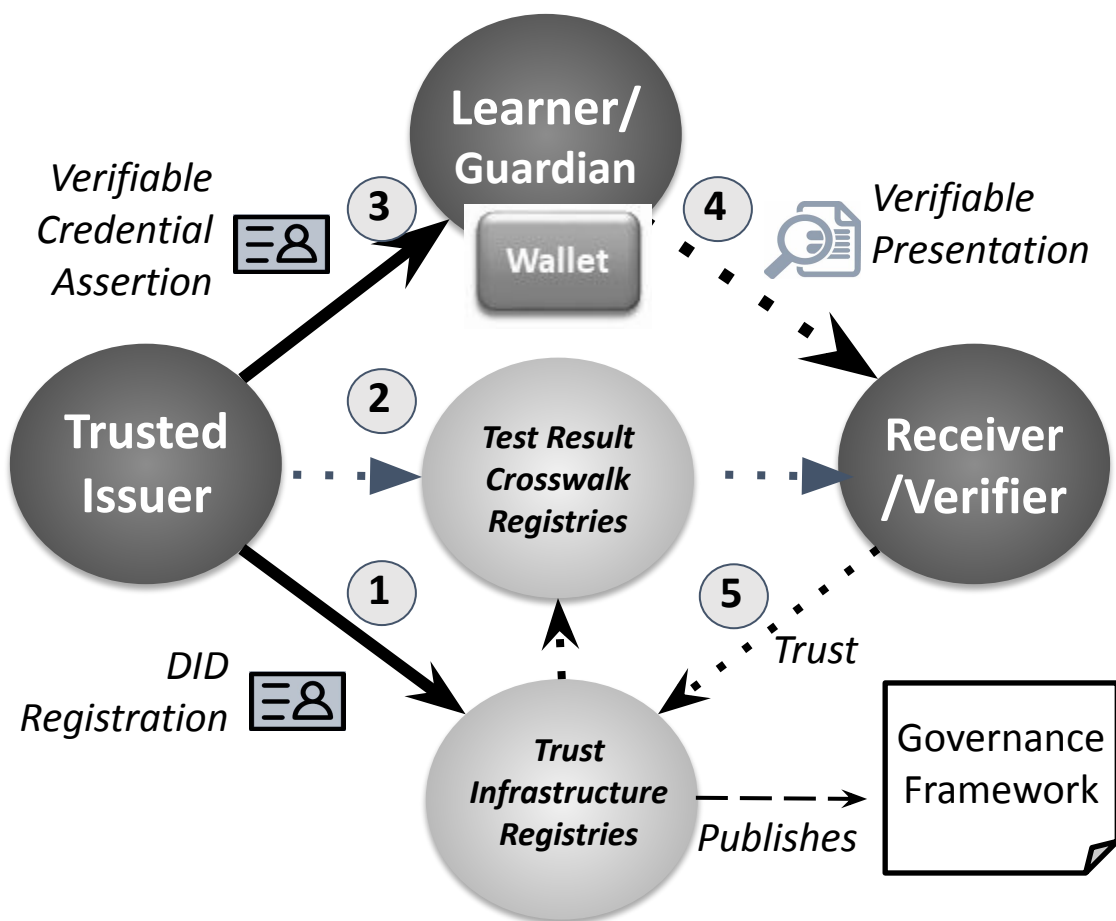
COVID Passport

Personal data control of verifiable COVID personal data



COVID Passport

Personal data control of verifiable COVID personal data



1. Trust. Education providers (Issuers) can register Distributed Identities (DIDs) in a broad range of trust infrastructure environments.

2. Test Results. Health providers (Issuers) make COVID test results, vaccine records available as machine-readable, linked data with registered crosswalks to other standards.

3. Credentials. Trusted Issuers can publish Verifiable Credentials (VCs), cryptographically signed to distributed ledgers that ensure mathematically that no byte has been altered. These signed "assertions" can mix granular skill mastery and scaled score data with aggregated accomplishments like diplomas from accredited institutions or industry-recognized credentials. Accreditation and revocation may be managed as services.

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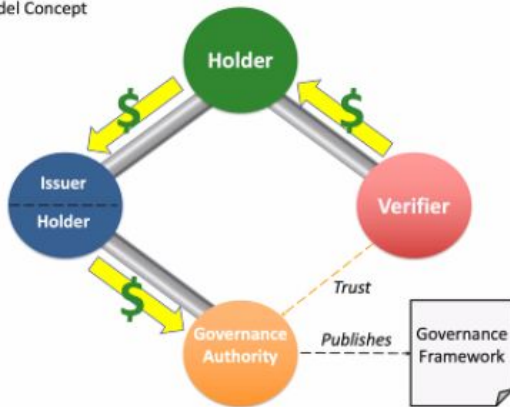
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Trust Over IP Foundation at Linux

Verifiable credentials from distributed identities with chains of trust



SSI Business Model Concept



5

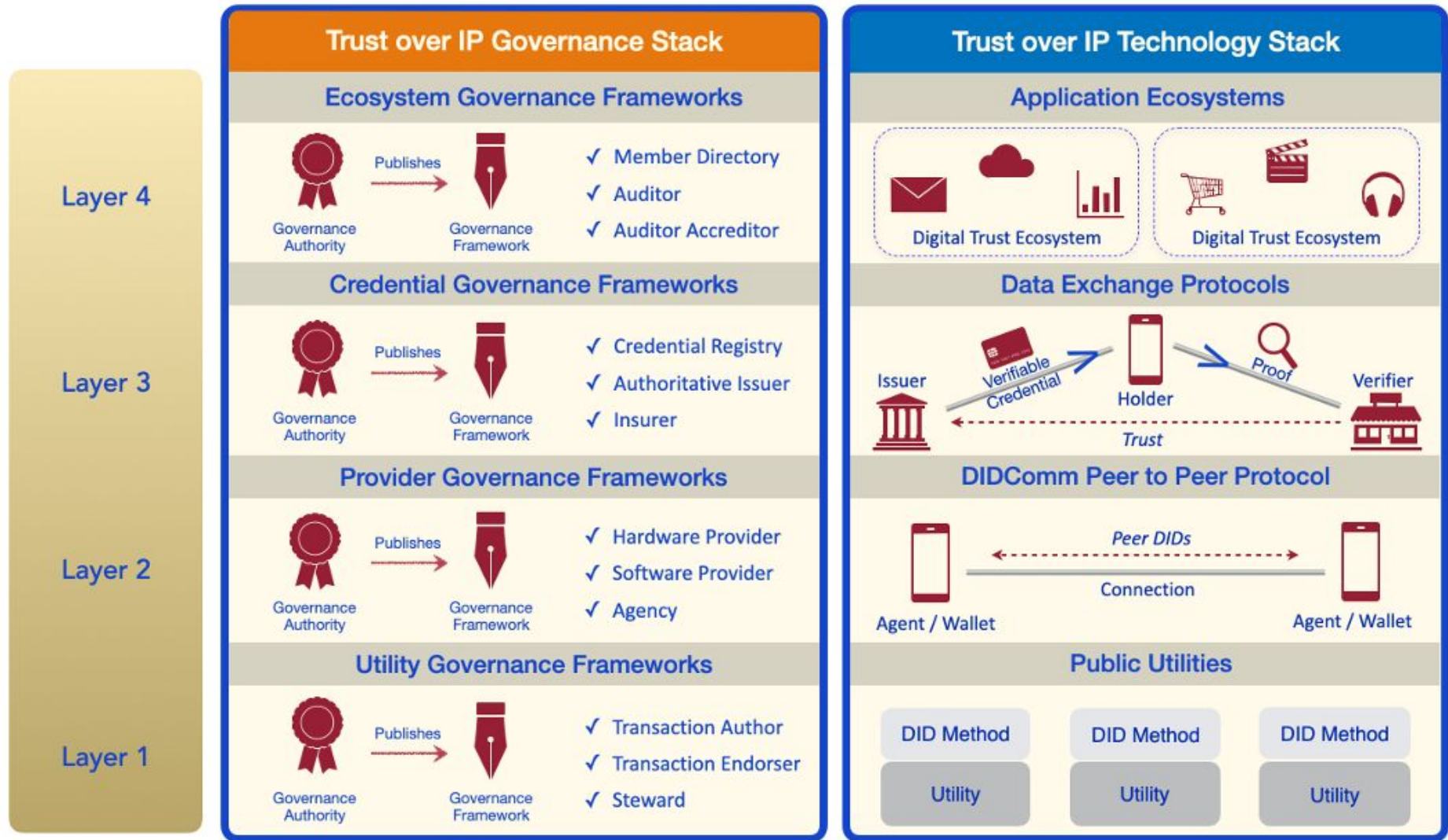
e:ernym



Drummond Reed

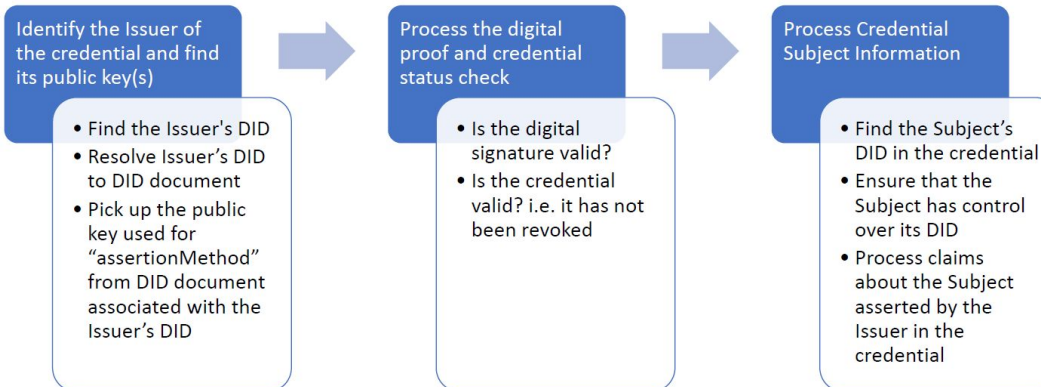
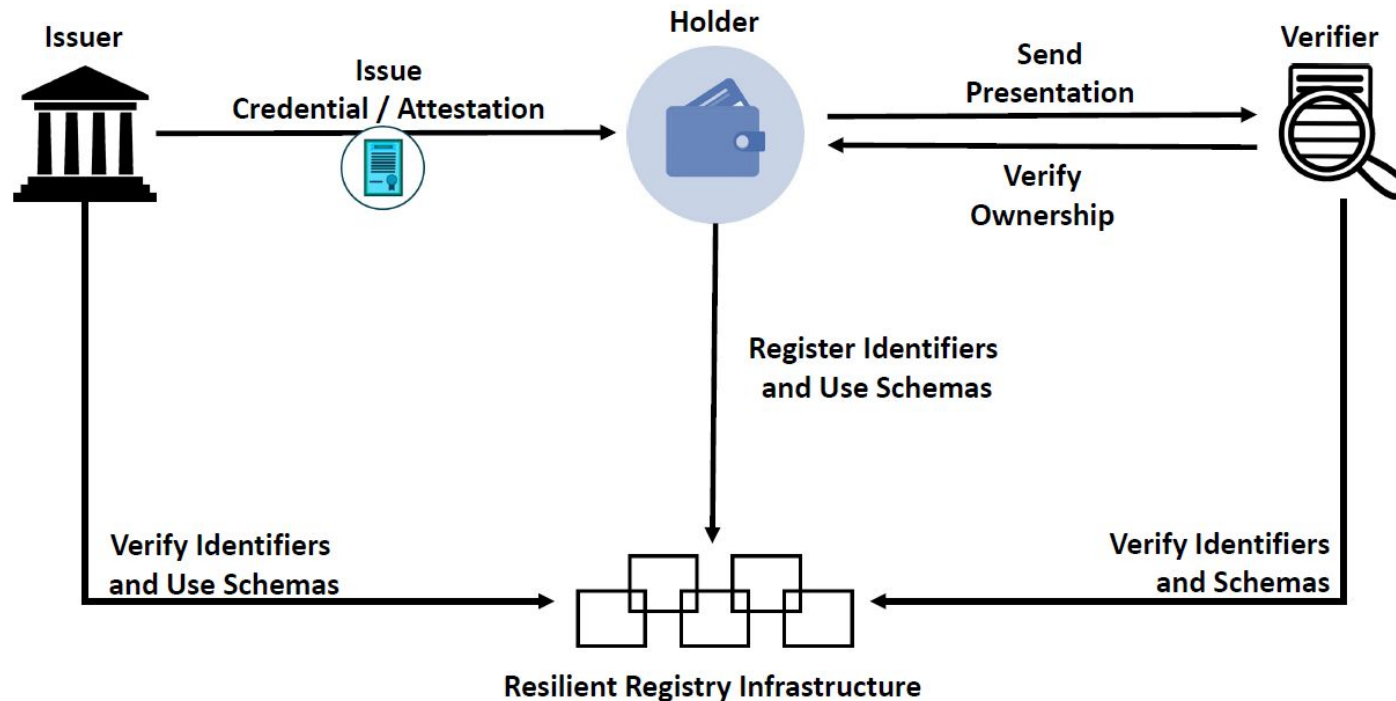
Trust Over IP Solution Stack

Verifiable credentials from distributed identities with chains of trust



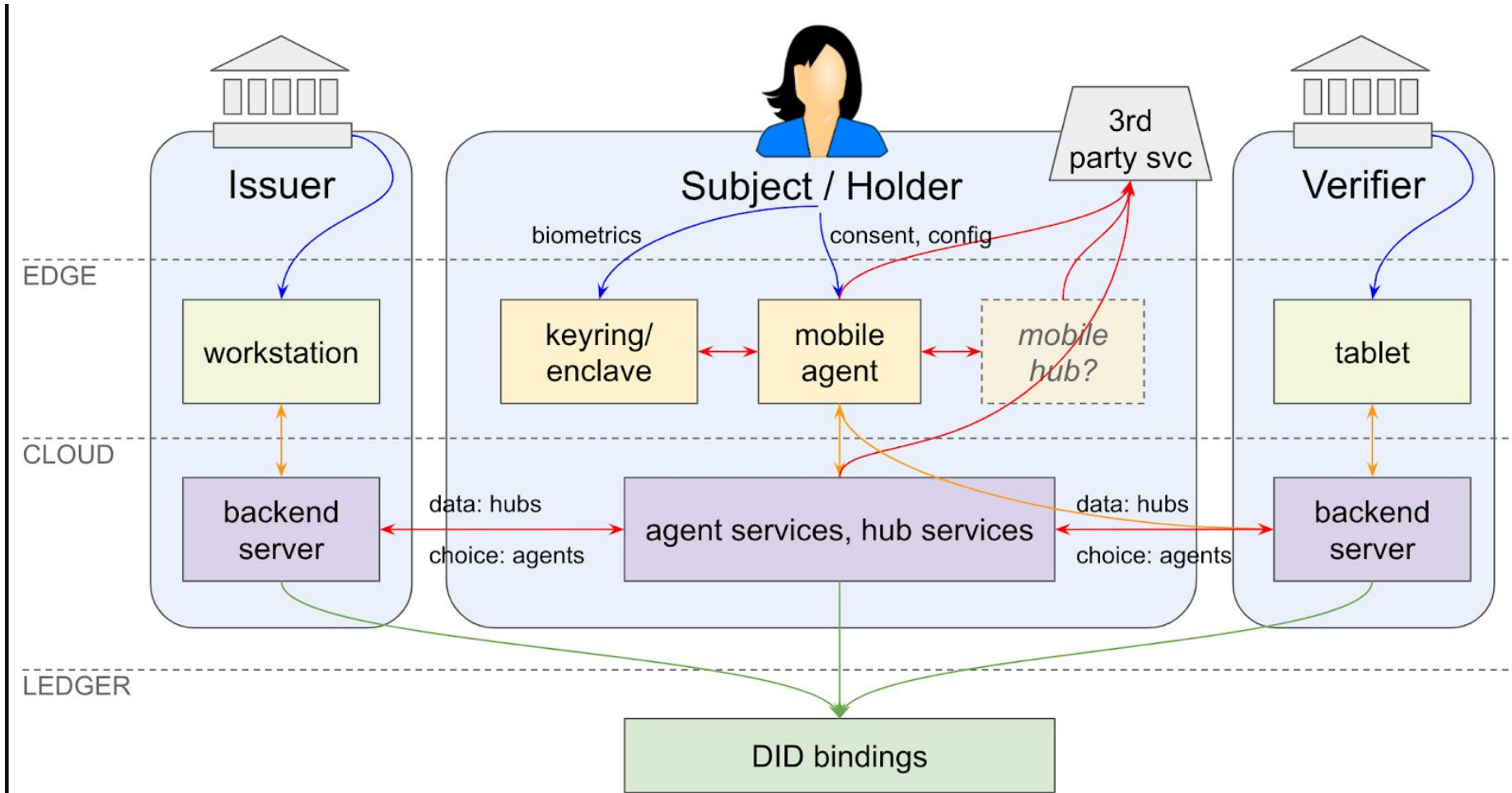
Pure SSI Solution Stack

Attestation Issuance & Verification Model



Trust Over IP Solution Stack

Verifiable credentials from distributed identities with chains of trust



Limited, High Leveraged Role for Blockchain

Verifiable credentials from distributed identities with chains of trust

					B L O C K C H A I N			
Issuer (Provider)	=>	Issuer asserts achievement	Issuer invites Learner to receive signed assertion	Issuer hashes verified identity to the blockchain		Issuer send Learner blockchain credential		
Learner (Recipient)	=>	Learner initiates achievement assertion	Learner accepts invitation and sends Issuer verified identity				Recipient sends credential to Verifier (Employer)	
Verifier (Employer)	=>							Verifier (Employer) checks the blockchain to

Putting lifelong learning records in a digital wallet



Putting lifelong learning records in a digital wallet

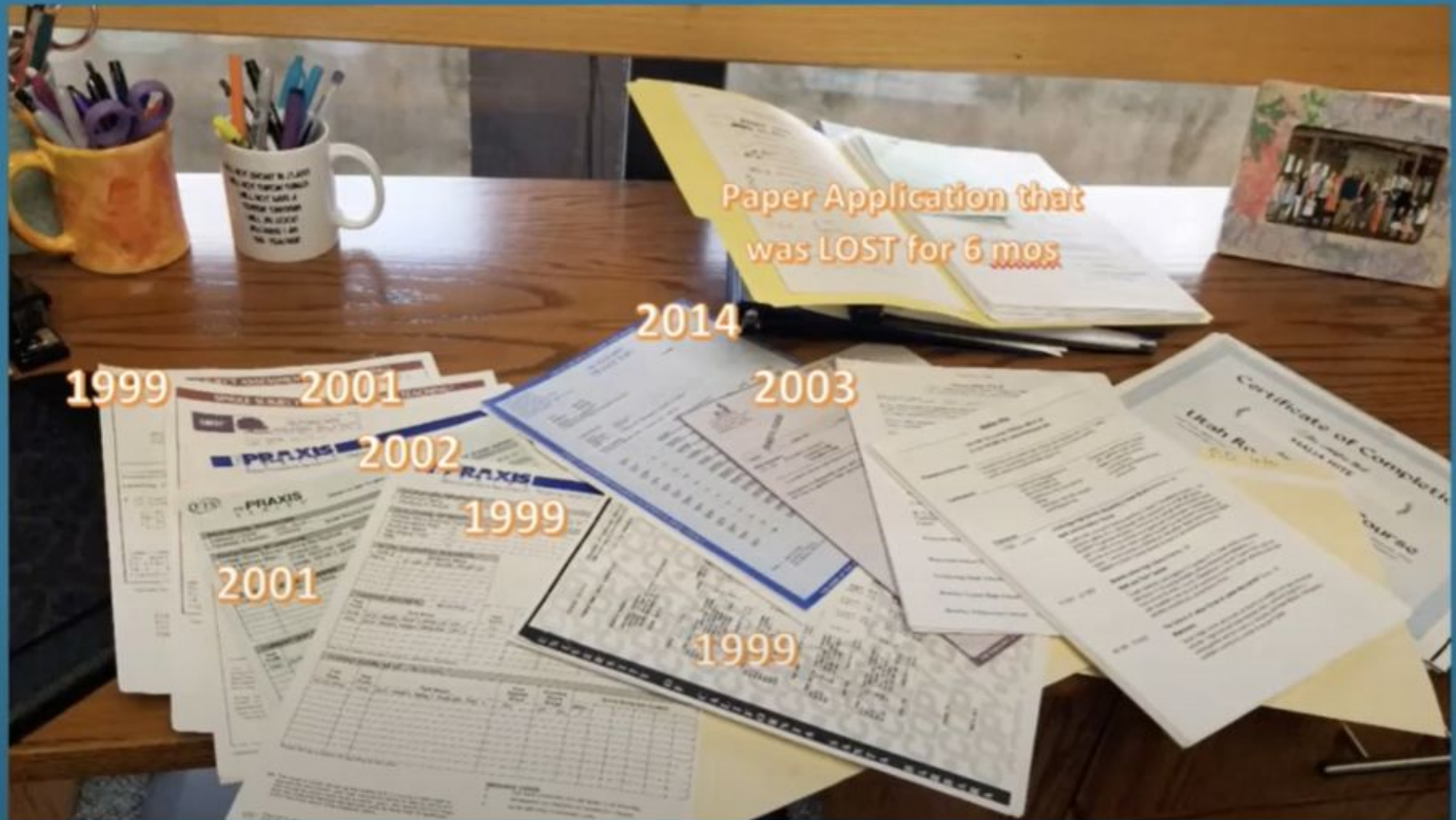


A Digital Wallet

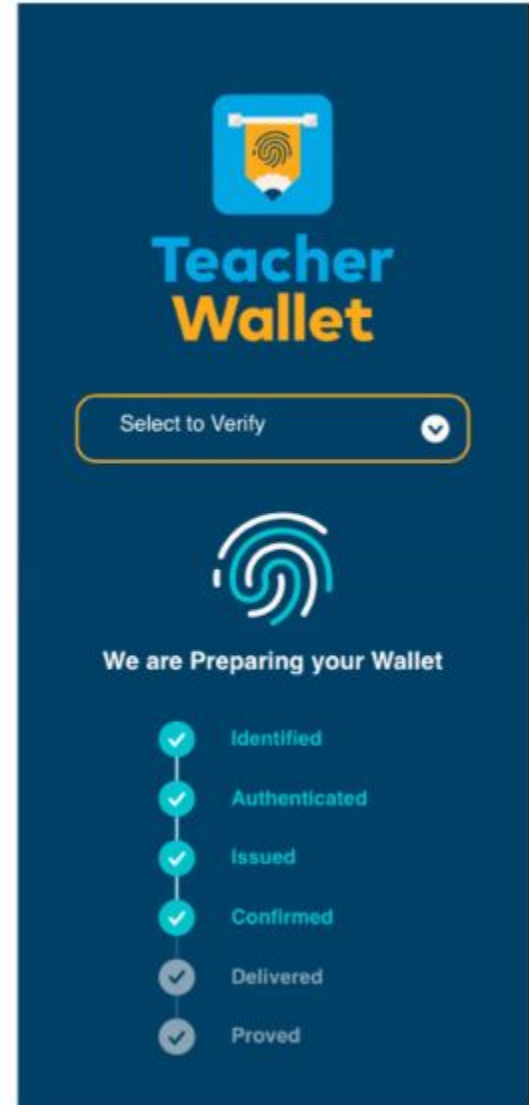
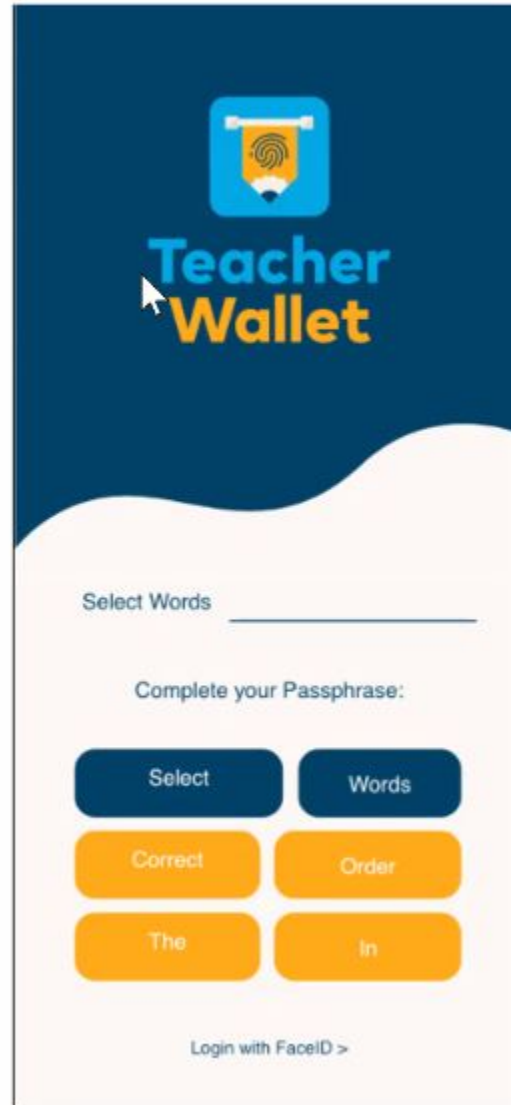
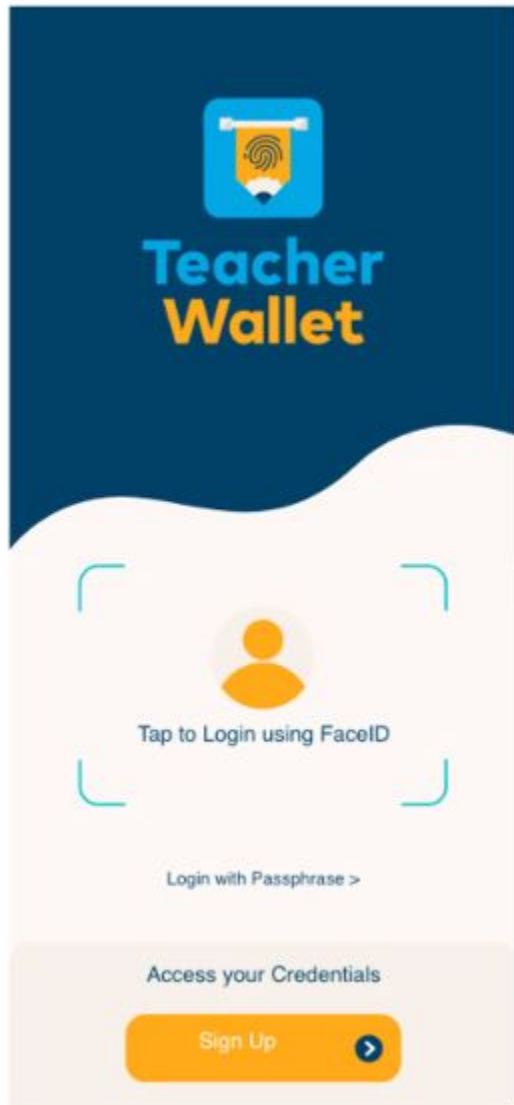
- Self Sovereign Digital ID
- Scan to Check-in, Verify, Etc.
- Learner, Parent, Teacher Mode
- Compliant, Private, Secure

Level Up To Earn Badges & Powers

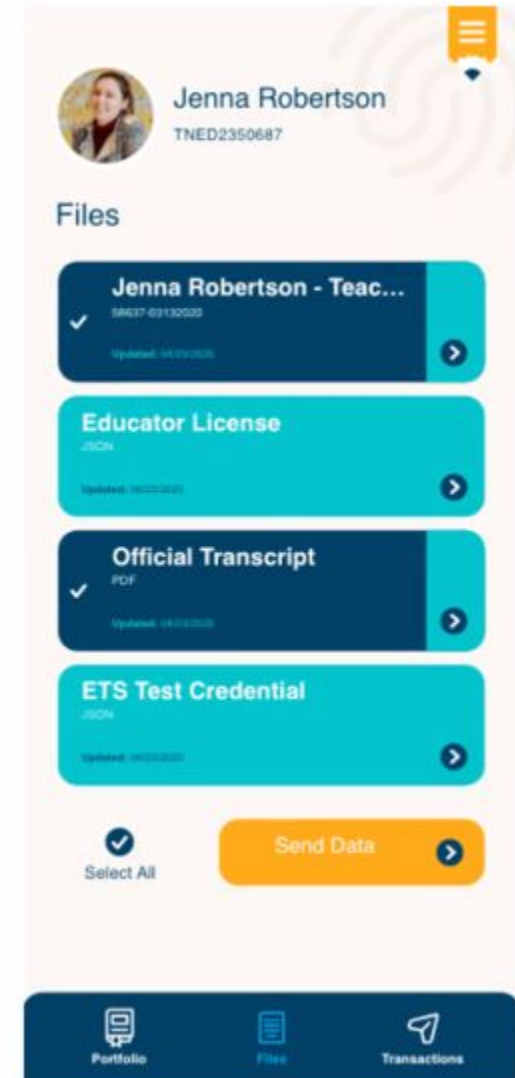
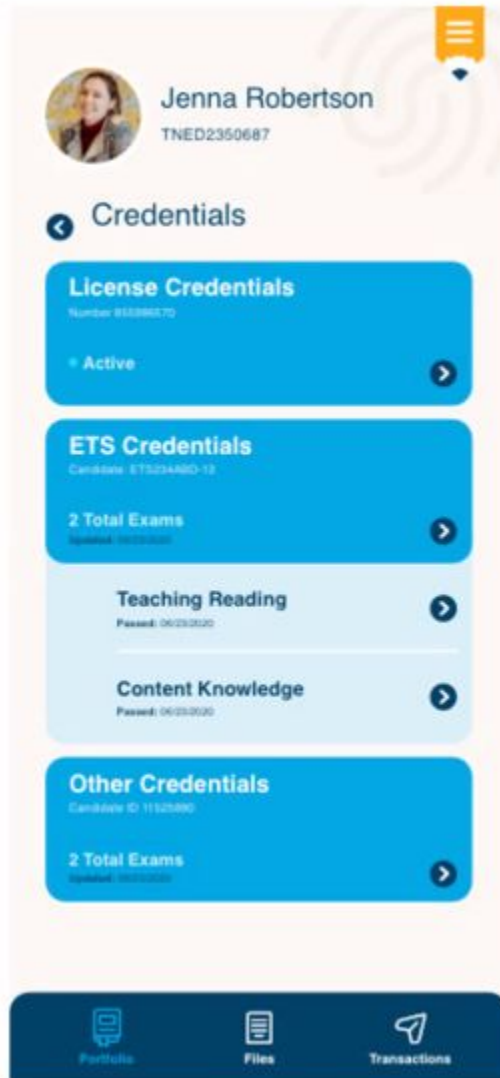
Putting lifelong learning records in a digital wallet



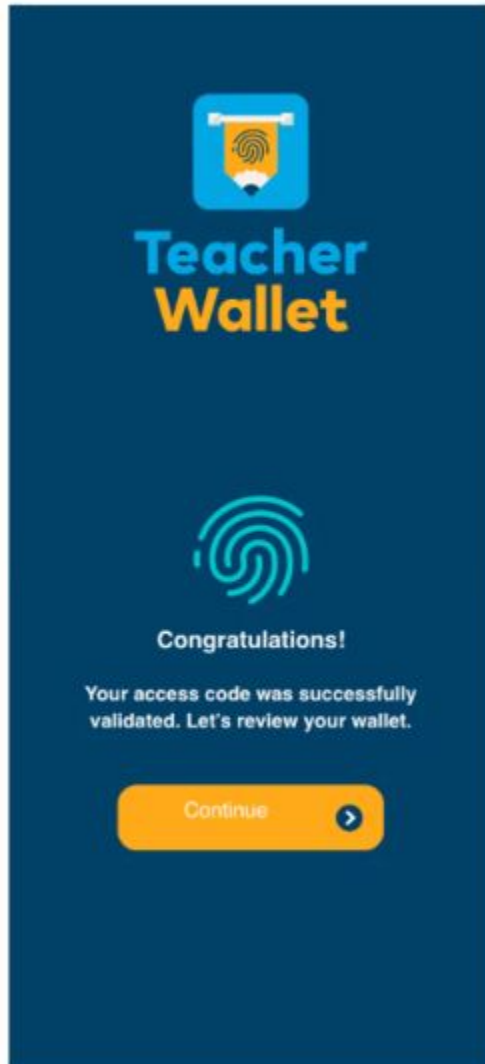
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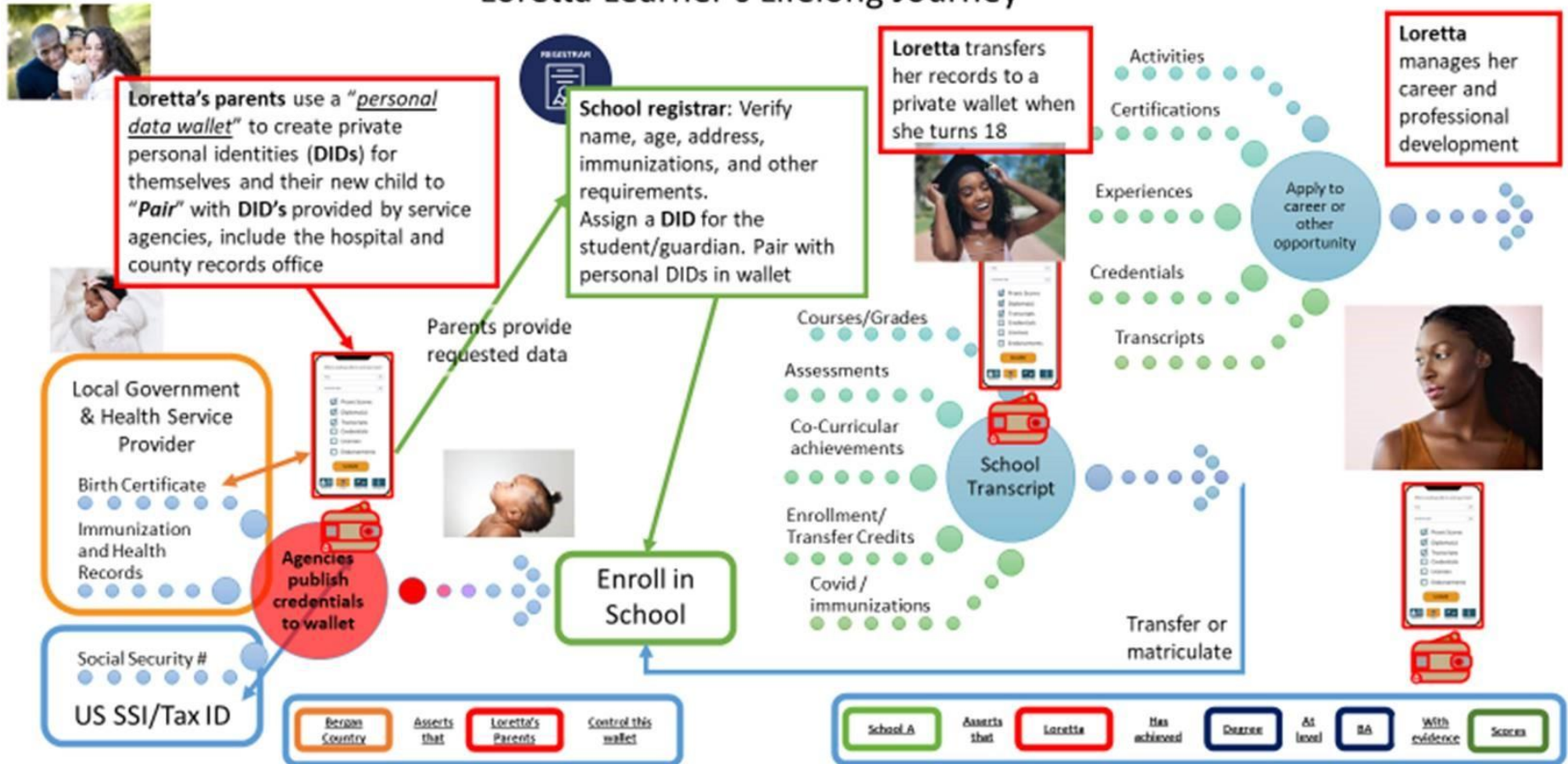


Putting lifelong learning records in a digital wallet



Putting lifelong learning records in a digital wallet

Loretta Learner's Lifelong Journey



Clear Career Pathways Require Connected Data

One of the best decisions that state leaders can make is to prioritize getting individuals and system leaders quality information that helps them make choices about careers. Right now, information on high-quality credentials and their associated outcomes is often not available, resulting in a failed opportunity to prepare individuals to meet the needs of a changing economy. State leaders must modernize P-20W data systems and create tools that provide transparency about available credentials and their postsecondary and workforce outcomes. When it comes to a decision as important as preparing for a career, people deserve transparent and easy-to-understand information.



Credential Confusion

Grace, Lisa, and Randall are trying to find information about career opportunities and lack good information to help them understand and compare possible pathways. They are feeling frustrated and uncertain about the best path forward, and are left in the dark as they struggle to meet their goals.

Connected Clarity

State leaders have invested in data systems that connect information about credentials to postsecondary and workforce outcomes, and Grace, Lisa, and Randall now have tools that help them answer their questions about career choices. They have clarity about the landscape of opportunities available to them and potential outcomes for those opportunities.

Key Concepts

1. **Open Standards**
 - a. **USED Common Education Data Standards (CEDS)**
 - b. **IEEE Conceptual Model for Learning Technology Systems (CM4LTS)**
2. **SSI. Distributed/Self Sovereign Identity (SSI)**
 - a. **Identity, Access, and Control**
 - b. **Trust Governance Frameworks**
3. **Open Skill Stack Ontologies.** IMS Global Competencies and Academic Standards Exchange (CASE), OpenSALT, CASE Network
 - a. **IMS Global CASE**
 - b. **Credential Engine**
4. **C/ILR. Comprehensive/Integrated Learner Record (CLR)**
 - a. **Achievement Descriptions**
 - b. **Achievement Assertion**
5. **Ed 3.0 Network**
 - a. **Nodes**
 - b. **Community**

Open Standards

Education 2.0

Technology integrated into the old system

1. Over the last 20 years, education data interoperability standards groups such as Dublin Core, SIF, IMS Global, PESC, CEDS, Ed-Fi, CTDL have formed and broader industry standards groups like IEEE, W3C, Schema.org have contributed standards to education.
2. All too often, the education data groups have pursued selfish organizational interests to create walled gardens instead of collaborating and harmonizing.
3. The result has been a fragmented ecosystem which has failed to generate scaled efficiencies to change the industrial delivery model that has been in place for 100+ years.

Education 3.0

The Internet of Education



WIKIPEDIA
The Free Encyclopedia

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[Featured content](#)
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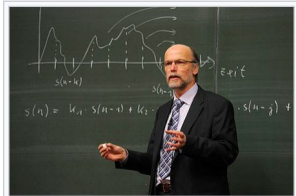
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Education 3.0

From Wikipedia, the free encyclopedia

Education 3.0 is an [umbrella term](#) used by [educational theorists](#) to describe a variety of ways to integrate technology into learning. According to Jeff Borden, Education 3.0 entails a confluence of neuroscience, cognitive psychology, and education technology, using web-based [digital](#) and [mobile technology](#), including apps, hardware and software, and "anything else with an e in front of it."^[1] Instead of viewing digital technology as a competitor to current teaching models, Education 3.0 means actively embracing new technologies to see how they can help students learn efficiently.^{[1][2]} Writer Michael Horn describes it as moving "beyond mass education to mass-customized education through blended learning," using the flexibility of technology to help students of varying backgrounds and skills.^[3] The term has been included in the term *Entrepreneurship Education 3.0* which denotes a broadening of entrepreneurship education with interdisciplinary appeal for non-business majors, according to a report in *Technically Philly* magazine.^[4]

With Education 3.0, classes move away from traditional lectures and instead focus on interactive learning, with question and answer sessions, reviews and quizzes, discussions, labs, and other project-based learning.^[3] It usually involves customization and personalization, such that educational content is tailored to meet the needs of specific students.^[3] It can mean reversing the traditional classroom learning, in which lectures happen in class and homework is done out of class, into [flipped classrooms](#), such that new content is delivered online while students work on assignments together in class.^[3]



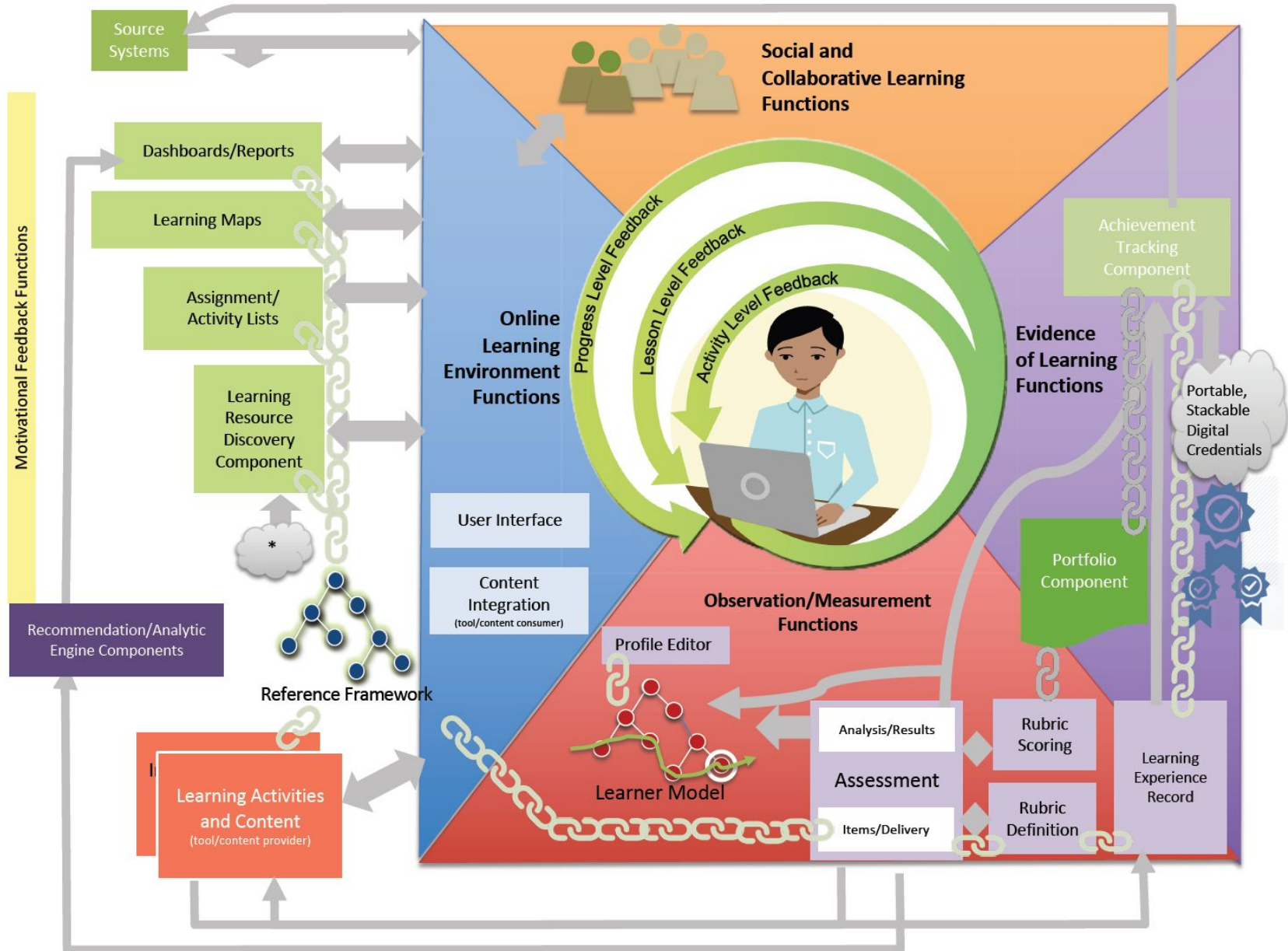
In Education 3.0, classrooms would move away from lectures, such as this one, to having class time be spent on discussions and projects, using digital technology.

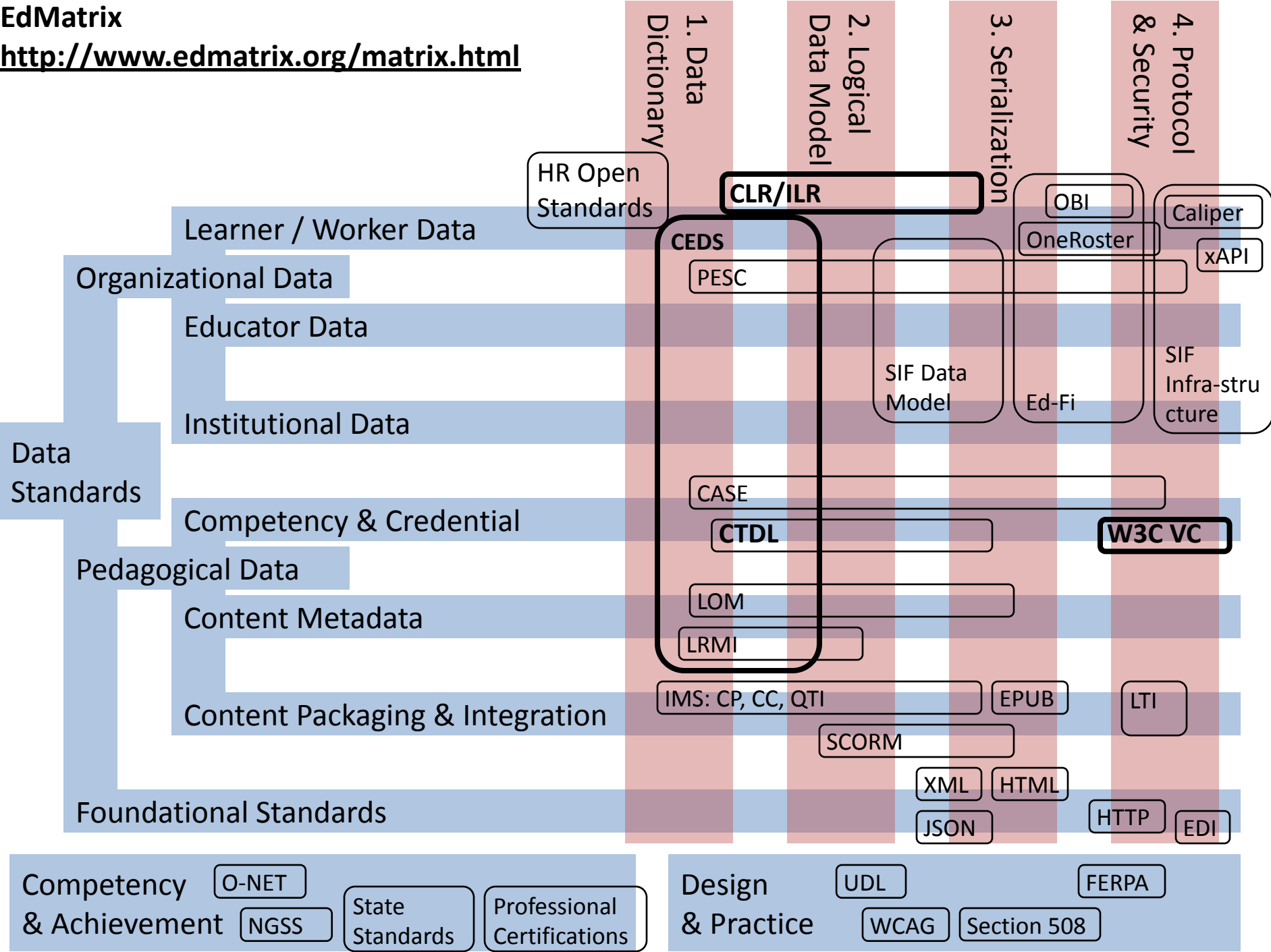
Ed 3.0 = informal group of individuals committed to open collaboration to create the protocols and shared services that enable lifelong, personalized, competency-based learning at the scale of the Internet:

- **Open Standards** - Alignment and harmonization of relevant technical standards.
- **Shared Utilities** - Shared, public good utilities and trusted issuers of identity, ontologies, and verifiable credentials.
- **Open Source Projects** - Shared code repositories linked within and across a global community of practice.
- **Co-Labs** - A connected and collaborative research network for pilots, reference implementations, and shared best practices.

Personalized, Competency-Based Learning

Learner-Centered Ecosystem





CEDS Conceptual Model

Normalized Data Schema



Common Education Data Standards

Ed.Gov

Common Education Data Standards

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Select a role on the left or an activity on the right to understand its relationship to CEDS.


IT Developers


Data Stewards


Researchers


CEDS Coordinators

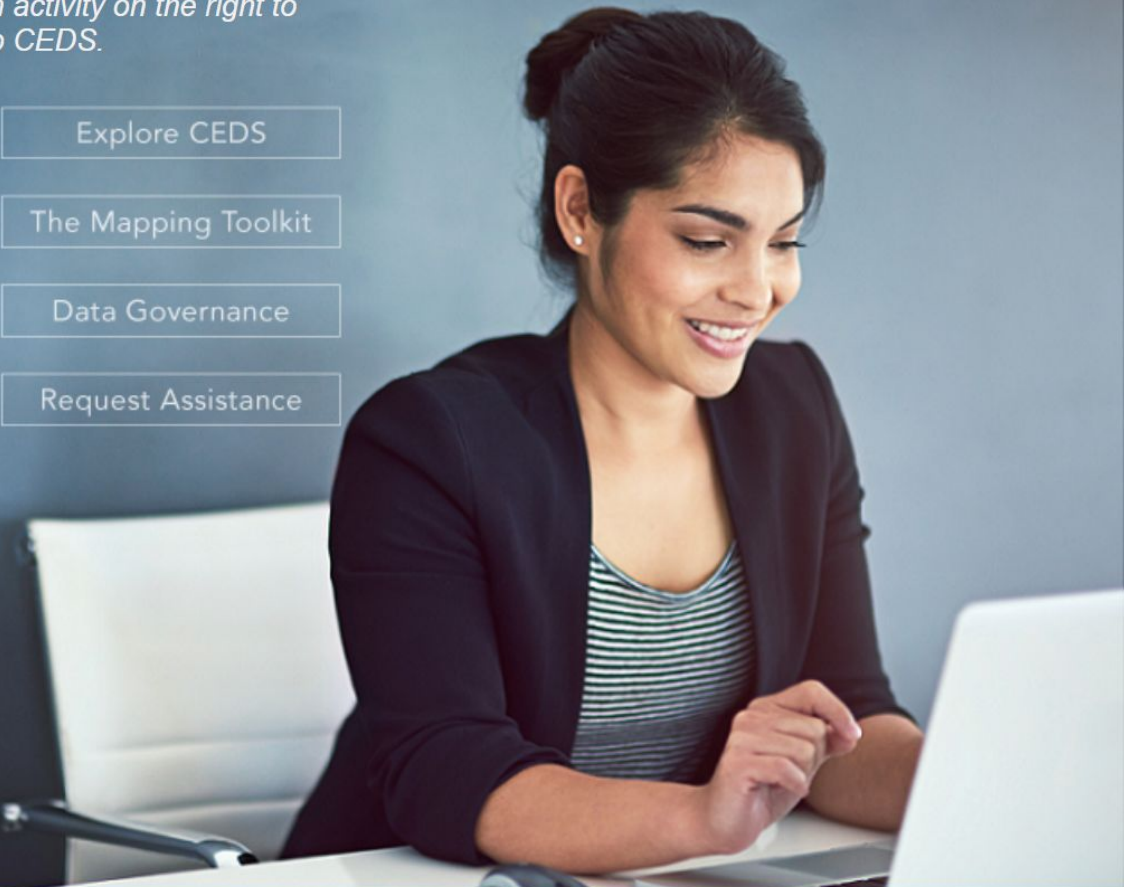

Policymakers & Practitioners

Explore CEDS

The Mapping Toolkit

Data Governance

Request Assistance



US Military Advanced Distributed Learning (ADL)

Universal Learner Record

 An official website of the United States government [Here's how you know](#) ▾



Advanced Distributed Learning Initiative



[About](#) [Policy](#) [R&D](#) [Partners](#) [Resources](#) [Contact](#)



Building the Future Learning Ecosystem

R&D for Distributed
Learning Modernization

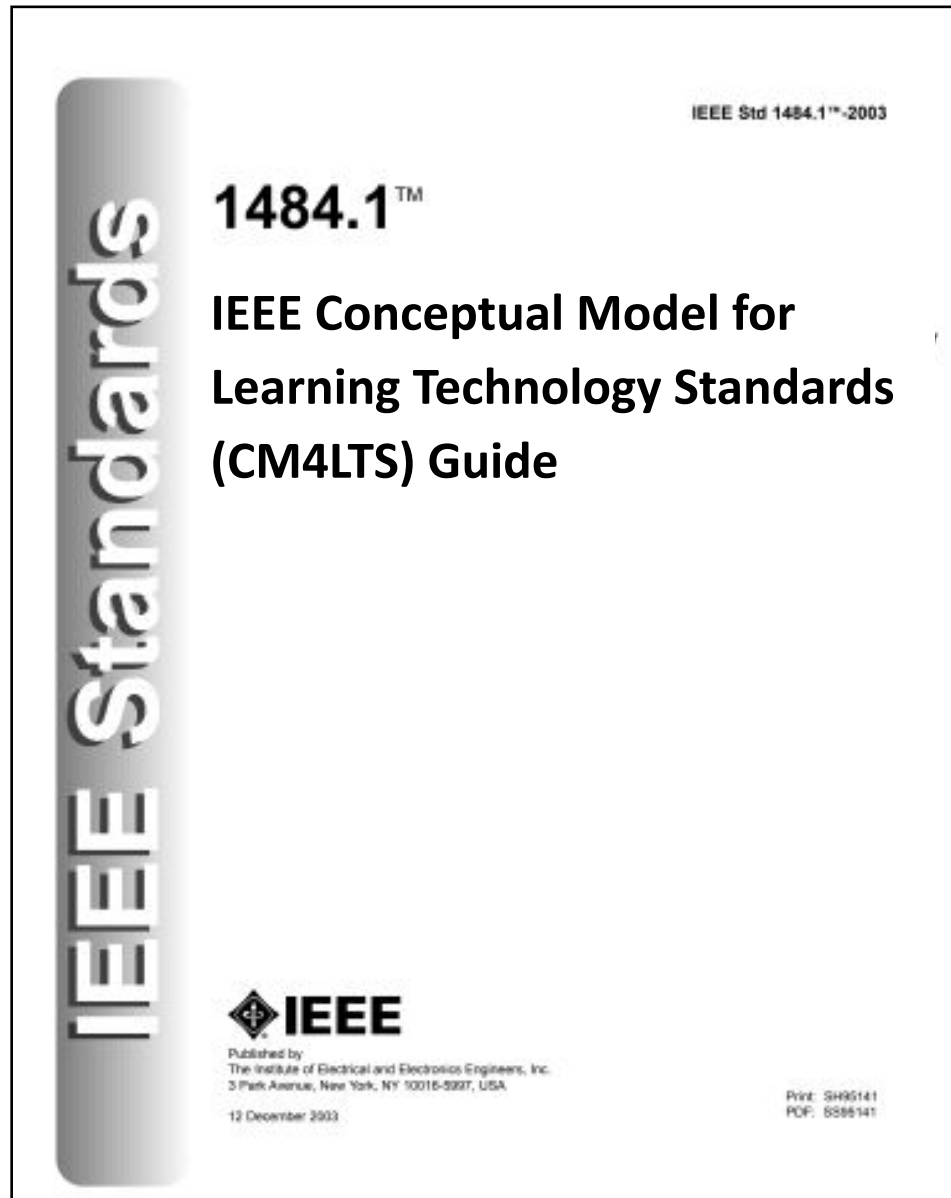


Distributed Learning Policy
and Technical Guidelines



Implementation Support
and Cross-Coordination

IEEE Conceptual Model for Learning Technology Standards (CM4LTS)



IEEE CM4LTS and ILR Recommended Practices

Section 1. Learning Contexts and Models

- 1.1. Transition from Traditional Education Models
- 1.2 Learner-Centered Model

Section 2. Information Model

- 2.1 CEDS Conceptual Model - **Jim Goodell**
- 2.2 ADL TLA Logical Model - **Jerry Gordon**

Section 3. Guiding Principles

- 3.1 Contract for the Web - **Tim Berners-Lee**
- 3.2 T3 Innovation Network Self-Sovereign Identity Principles, **Kim Hamilton**
- 3.3 Collaboration on Open standards - **Open Pledge**

Section 4. Technical Meta Model

Section 5. Technical Implementation Guidance

- 5.1 W3C DID Identity and Trust - **Drummond Reed**
- 5.2 T3 Open Ontology References - **Brandt Redd**
- 5.3 W3C VC with IMS CLR Verifiable Assertions - **Nate Otto**

Section 6. Mutually Exclusive Collectively Exhaustive (MECE) Use Cases - Greg Nadeau

Section 7. Standards Alignment & Harmonization

- 7.1 Proposed Relationship of CM4LTS to other LTSC Groups
- 7.2 Proposed Relationship of CM4LTS to open, published technical standards outside of LTSC

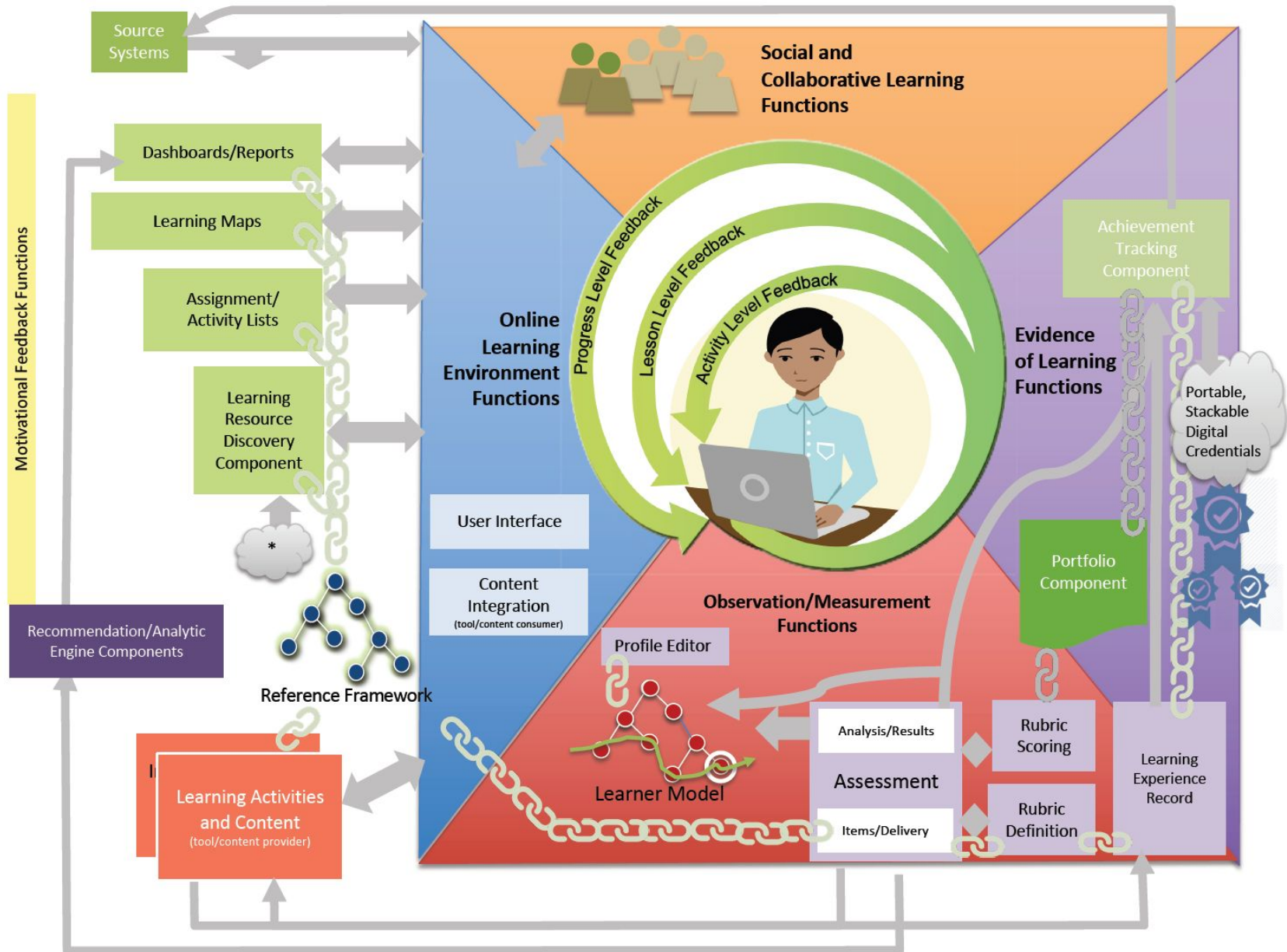
IEEE MECE Use Cases

Mutually Exclusive, Collectively Exhaustive Taxonomy Functions by Actor Type

	Draft IEEE ILR Implementation Guide Scope				
	Identity	Planning	Assessment	Learning	Learning Economy
Education provider	1.1 Directory - relate programs and agencies, employ and assign staff, and enable parent/guardians to enroll their non-adult learner or adult learners to enroll themselves	2.1 Achievement Descriptions - establish the competencies, co-curricular activities, pathways, and crosswalks to other achievement description frameworks that will serve as linked data learning targets and credentials 2.2 Learning Resources/Instructional Materials - align curriculum and digital instructional materials, learning resources, and assessment items to linked data learning targets to create playlists for multiple pathways.	3.1 Achievement Assertions - assert a verifiable achievement level about a learner, referencing a linked-data description of the achievement, based on defined evaluation criteria and protocols	4.1 Learning Management - control access to learners' personal information to members and agents of that organization with legitimate educational purposes including learning analytics	
Educator	1.2 Employment - begin employment with an education agency and get access to communities of practice and rosters with class sections of learners	2.3 Lesson Plans - access district selected content and modify and plan for instructional delivery	3.2 Evidence - Evaluate student work and provide evidence for achievement assertions	4.2 Instructing - consuming CLR data to individualize instruction	
Learner	1.3 Enrollment - complete my portion of enrollment and gain access to my personal learning records and services	2.4 Pathways - select goals and pathways	3.3 Assessment - participate in assessments and view results	4.3 Learning - access optimal learning experiences in the next 'zone of proximal learning' along the pathway to my educational goals	5.1 CLR Wallet - curate verifiable assertions of linked-data description of the achievements and other credentials in a secure 'wallet' and control access to designated education providers and prospective/current employers.
Parent/guardian	1.4 Parent/Guardian Enrollment - enroll my non-adult learner in a school district or supplemental education provider	2.5 Individual Education Plan - participate in evaluation meetings	3.4 Support - view assessment results and other achievement assertions and provide support	4.4 Monitor and Motivate - ensure basic needs are met and help manage time and motivation to try hard things and ask for help when challenged	5.2 Consent - control access to specific portions of my non-adult learner's personal record (by anyone outside of the education provider that issued the record) to specific individuals or organizations for specific periods of time
Employer					6.1 Talent Signaling - define jobs based on linked-data competencies and other desired characteristics and requirements 6.2 Job Data Exchange - match shared verifiable assertions of linked-data description of the achievements and other credentials to identify qualified candidates for positions
Specs	DID, OneRoster	CTDL, CASE, LTI	VC, CLR, QTI, PESC	xAPI, Caliper	Schema, O*NET
Shared Service Utilities	EdExchange	Credential Registry CASE Network Registry	Dynamic Market	Dynamic Market	JDX

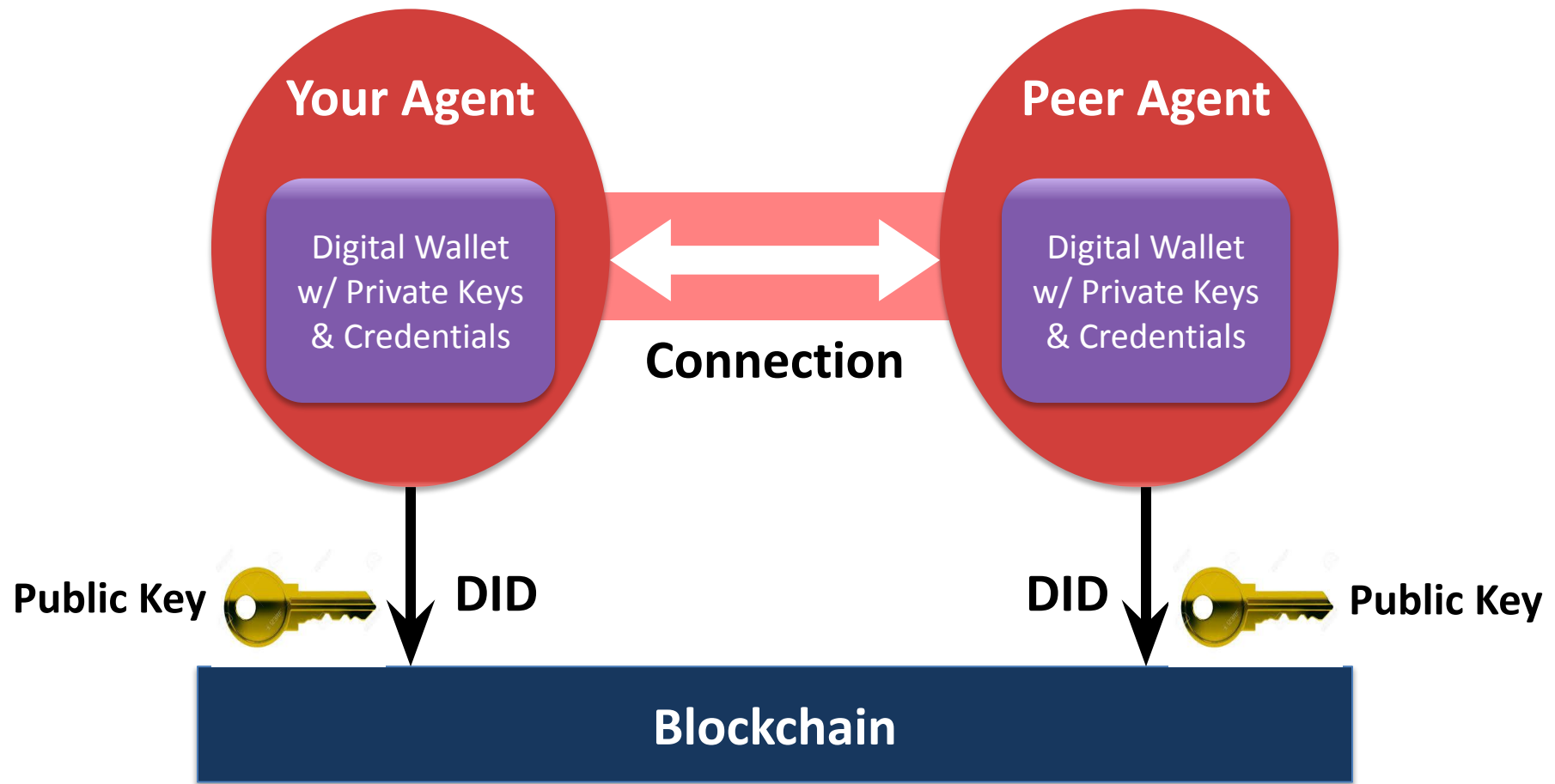
IEEE CM4LTS

Conceptual Model for Learning Technology Systems (CM4LTS)



SSI

Self-Sovereign Identity, Access, and Control



Solves the decentralized PKI (public key infrastructure) problem

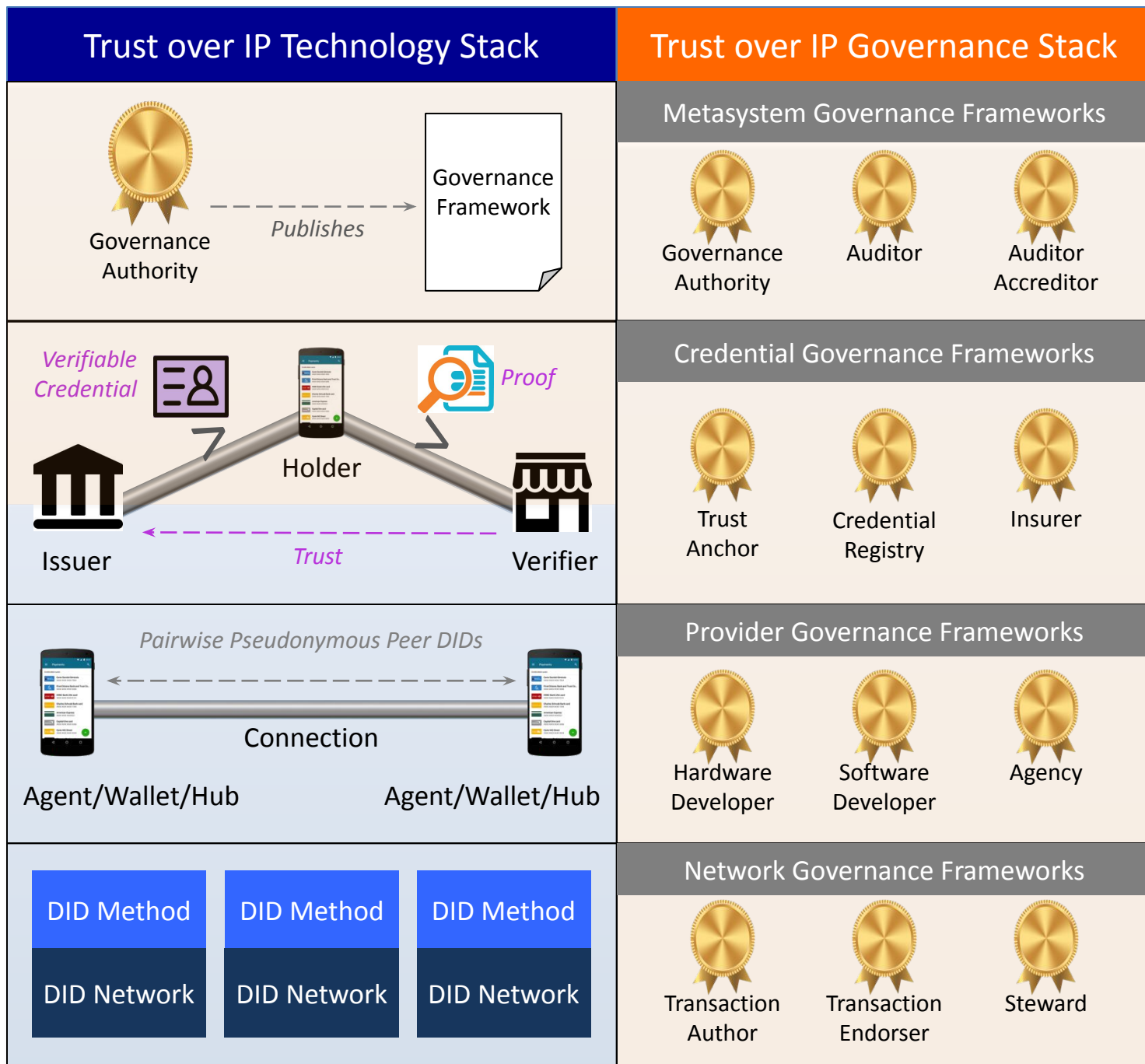


Layer Four: Governance Frameworks

Layer Three: Credential Exchange

Layer Two: DIDComm

Layer One: DID Networks (Public Ledgers)



Metasystem Governance Framework

Collaborative Governance and Trust Network

Key Concepts

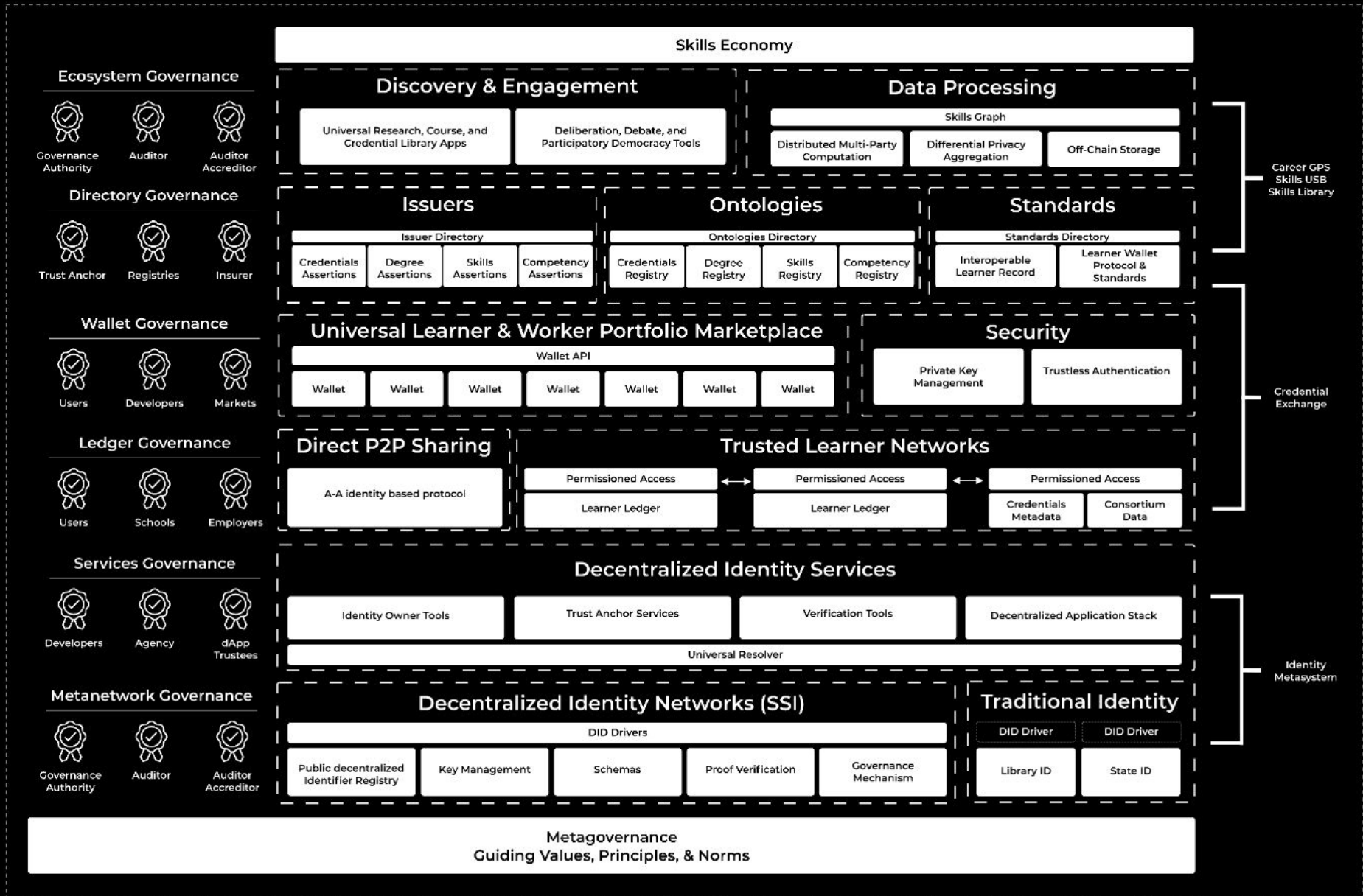
- a. **The Internet of Education** - an umbrella term used by educational theorists to describe the confluence of neuroscience, cognitive psychology, and education technology, using web-based digital and mobile technology, including apps and devices to enable personalized, competency-based learning across nodes of a meta network. (aka Education 3.0, the Ed 3.0 Network, in this context the “Network”)
- b. **Human Development** - the process of enlarging people's knowledge, understand, and skills.
- c. **Technical Standards** - written specifications for data structures and interfaces.
- d. **Academic Standards** - an information resource that includes a statement that describes a capability or behavior that a person may learn or be able to do within a given situation and environment along with definitions of the potential levels of mastery and metadata related to that statement (aka competency definitions, competencies, skills, knowledge, abilities, learner outcomes, learning targets, course objective, ontologies)
- e. **Trust Over IP Stack** - the process in which a governance authority publishes a governance framework in both human and machine-readable formats to enable distributed verification of credentials.
- f. **Metasystem Governance Framework** - a stated set of purpose, principles, and protocols agreed to by nodes of organizations and individuals to form the Network.

2. **Purpose.** The purpose of the Network is to advance learning development.

3. **Principles.** By engaging with the Network, organizations and individuals affirm the following principles:

- a. **There is only one Internet** - We all need to work together to protect the web from abuse and ensure it benefits humanity by adopting the [Contract for the Web](#),
- b. **Open standards.** Technical and academic standards should be published without restrictions on use by organizations that align practices to [OpenStand](#).
- c. **Self-Sovereign Identity & Access Control.** Each personal learner record is dual controlled by the issuer and the learner. Digital identity and access control should follow the [Ten Principles of SSI](#), [Trusted Learner Network Principles](#), and the [T3 SSI Principles](#) as adapted by [IEEE](#).

Digital Wallet Ecosystem



Open Skill Ontologies

Custom Publishing Components

Dynamic OER Content Curation and LTI Resource Search

General Info

(1) Content must be grouped and sequenced into curriculum (ToC)

(3) Some content is actionable and should be used within an existing LMS

(2) Content must be aligned to local academic standards through a compendium of crosswalks

(4) Some content is viewed by the teacher and should be easily printed

EngageNY
ENY 9.1 Unit 1 Lesson 14
English Language Arts Grade 09

Table of Contents

- Grade 9 Module 1 (EngageNY)
 - 9.1 Unit 1 (EngageNY)
 - 9.1 Unit 1 Lesson 1 (EngageNY)
 - 9.1 Unit 1 Lesson 2 (EngageNY)
 - 9.1 Unit 1 Lesson 3 (EngageNY)

Standard Alignment

- RL.9-10.5 Reading > Literature > Structure
- SL.9-10.1 Speaking & Listening > Discussion > Range of Discussions
- SL.9-10.1.c Speaking & Listening > Discussion > Developing Ideas in Discussion
- SL.9-10.4 Speaking & Listening > Presentation > Present Clearly

Resource

- Rubric
 - 9.1 Short Response Rubric
- Student Tool
 - 9.1 Short Response Checklist
- Student Tool
 - 9.1 Common Core State Standards Tool
- Student Tool
 - 9.1 Stage Analysis Tool
- Assessment
 - 9.1.1.14 Quick Write
- Text
 - 9.1.1.14 Agenda
- Exercise
 - 9.1.1.14 Text-Dependent Questions
- Exercise
 - 9.1.1.14 Homework

9.1.1 Lesson 14

Introduction

In this lesson, students continue their analysis of the structure of "St. Lucy's Home for Girls Raised by Wolves" by Karen Russell. Small groups prepare to present their analysis of one of the five stages from the story. As groups present their analysis, all students complete a Stage Analysis Tool for the entire short story. Students also engage in a whole-class discussion of Russell's choice to structure the story according to stages from *The Jesuit Handbook on Lycanthropic Culture Shock*. Student learning is assessed via a Quick Write at the end of the lesson: Analyze the impact of Russell's choice to use epigraphs to structure the text.

For homework, students continue their Accountable Independent Reading (AIR) through the lens of focus standard RL.9-10.2 or RI.9-10.2 and prepare for a brief discussion of their text based on that standard. For homework, students also review "St. Lucy's Home for Girls Raised by Wolves" and respond to the following prompt: Select a character from "St. Lucy's Home for Girls Raised by Wolves." How does Russell use physical descriptions to develop this character?

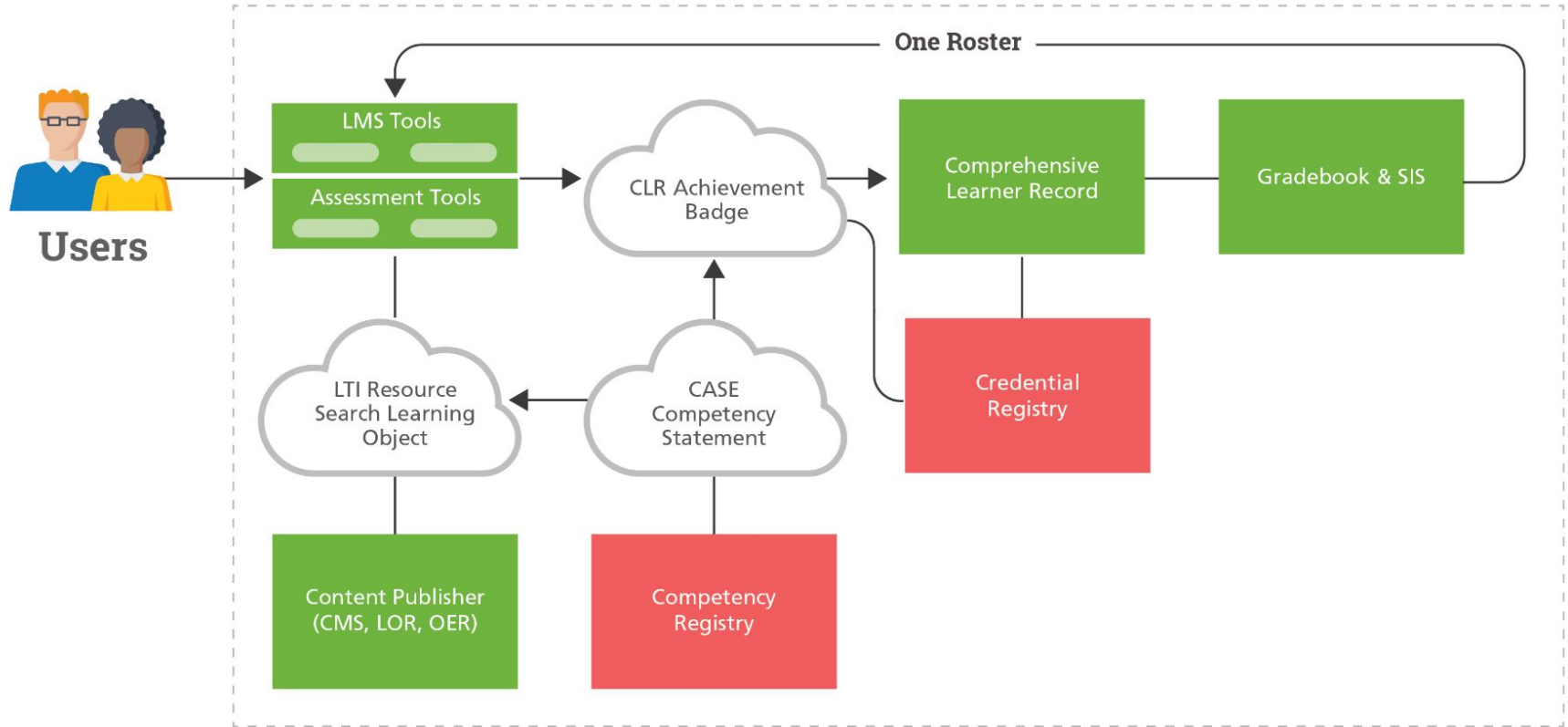
Standards

Assessed Standard(s)	
RL.9-10.5	Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate what is revealed about characters and settings (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.
Addressed Standard(s)	
SL.9-10.1.c	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.
SL.9-10.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development,

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Integrated Ecosystem

Moving from separate specs to a single, integrated reference-model and registry service.



LEGEND



Apps



Service End Points

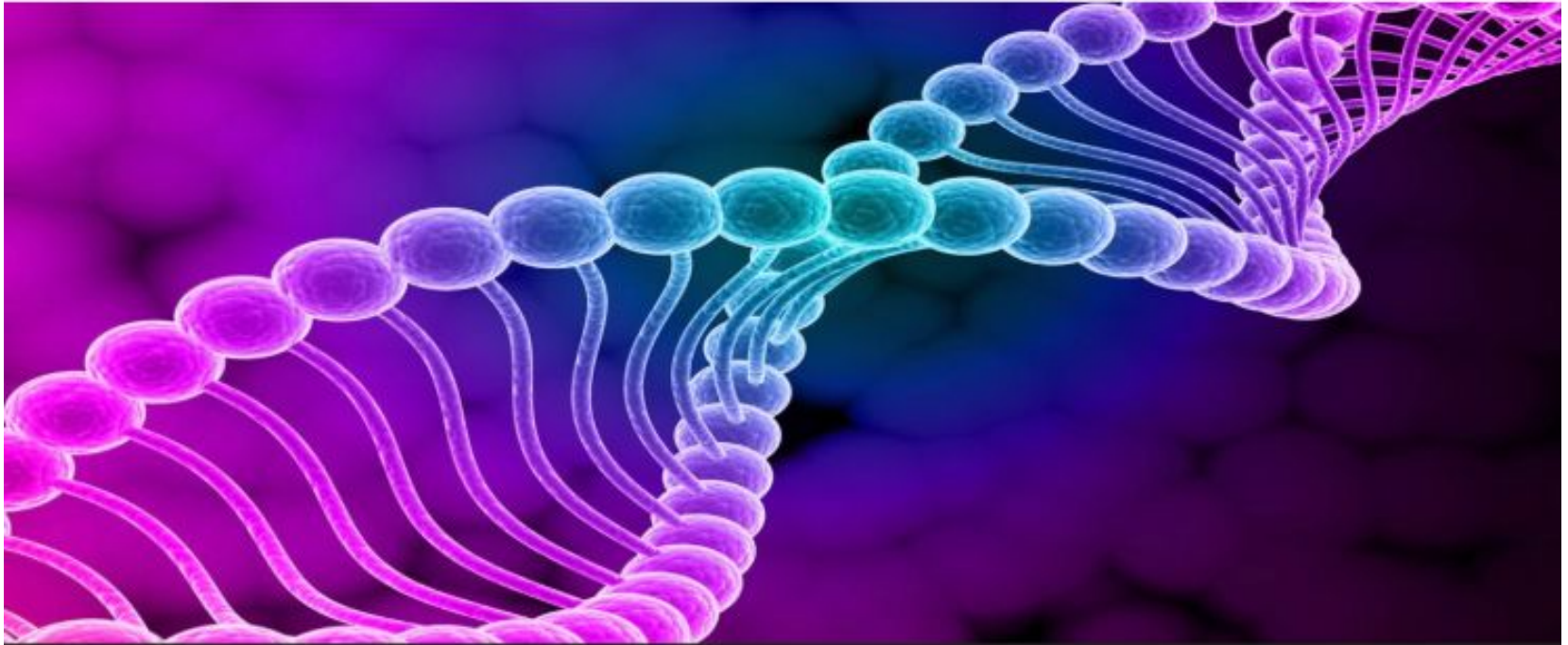


Registry Services

End User Functions Shared Data

CASE - Competencies and Academic Standards Exchange

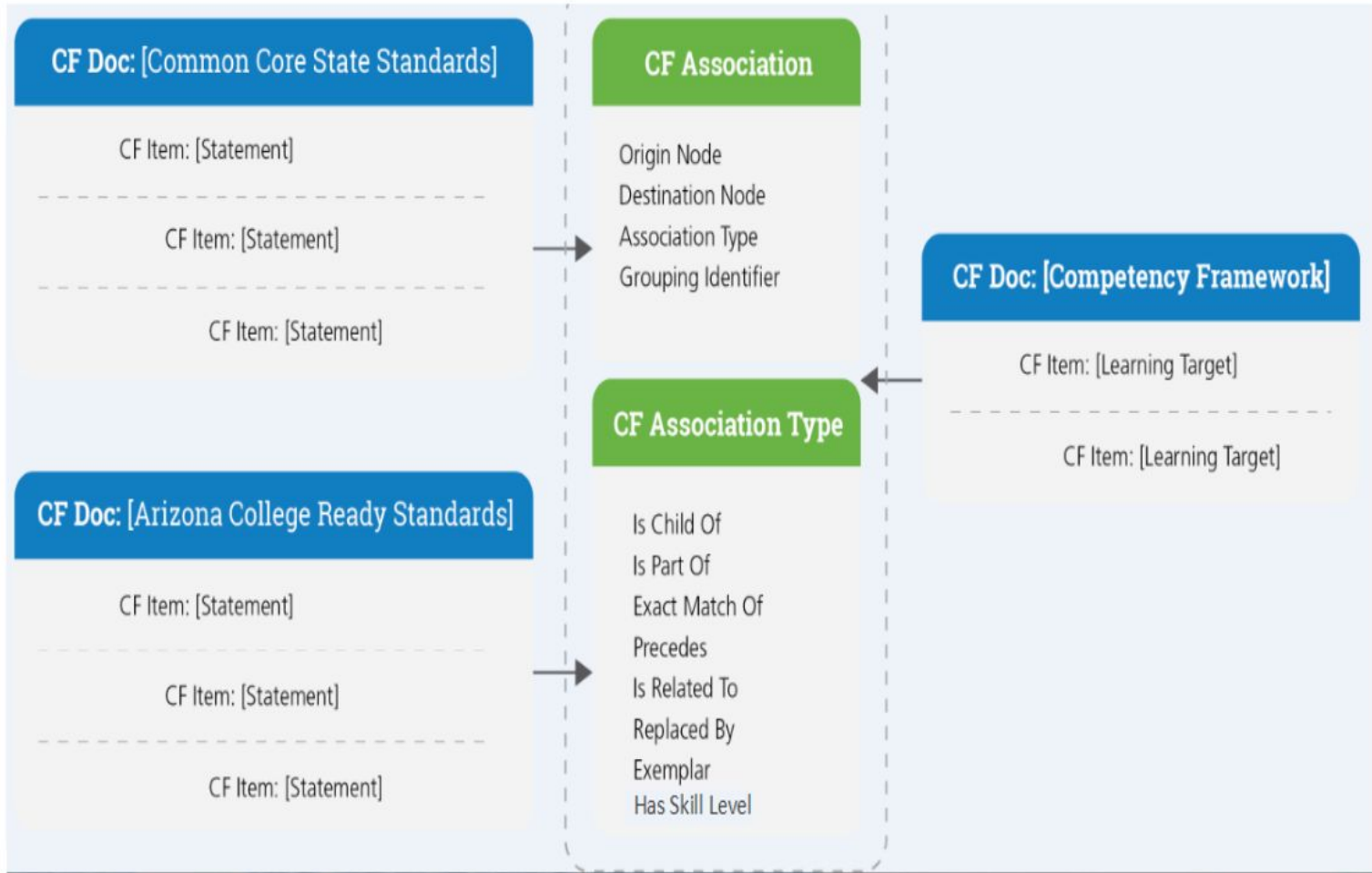
'Competencies' include any skills, knowledge, abilities, learning targets, and outcomes.



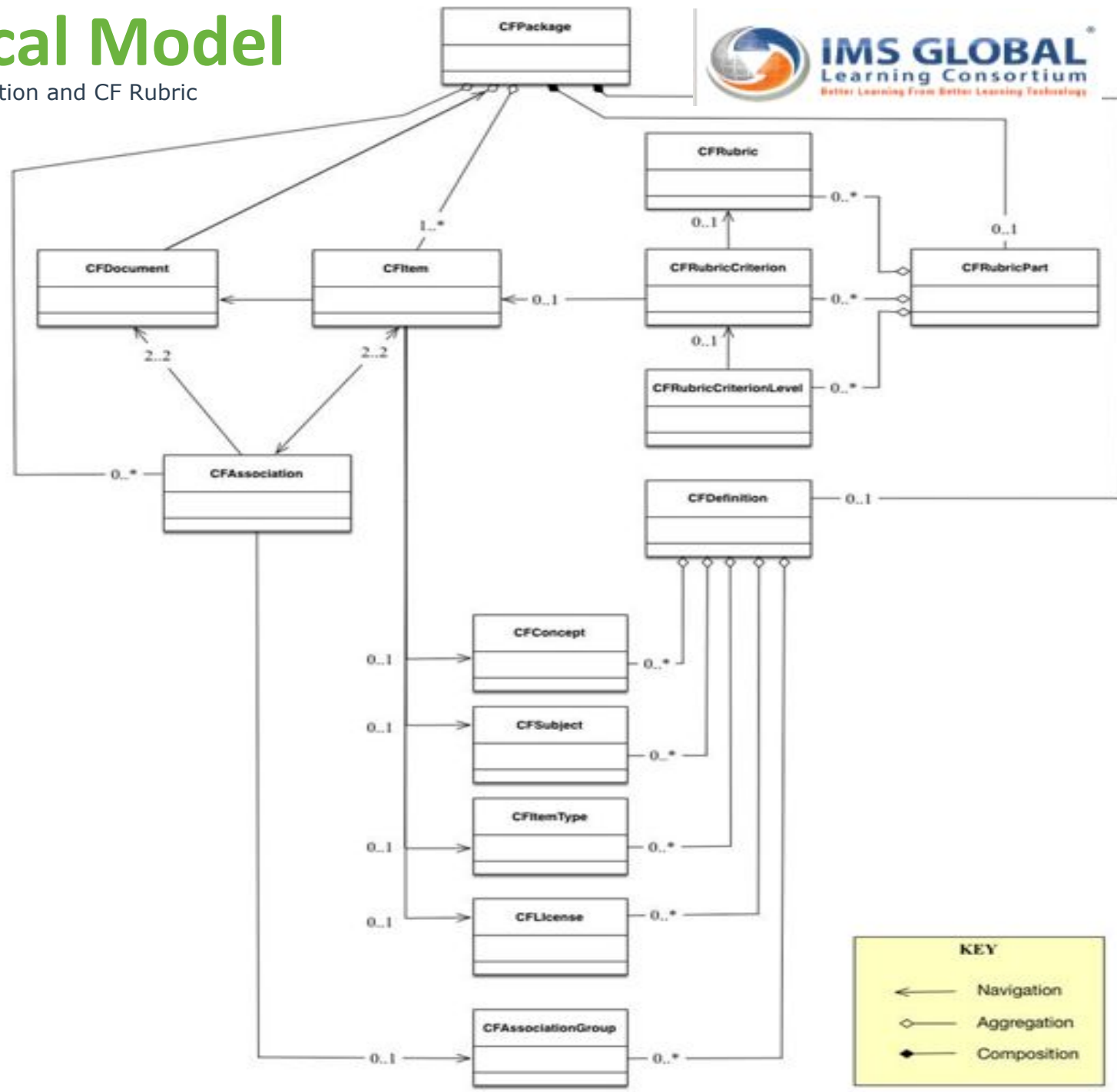
THE ACADEMIC GENOME

CASE Conceptual Model

Competency Framework Package (CF Pkg)



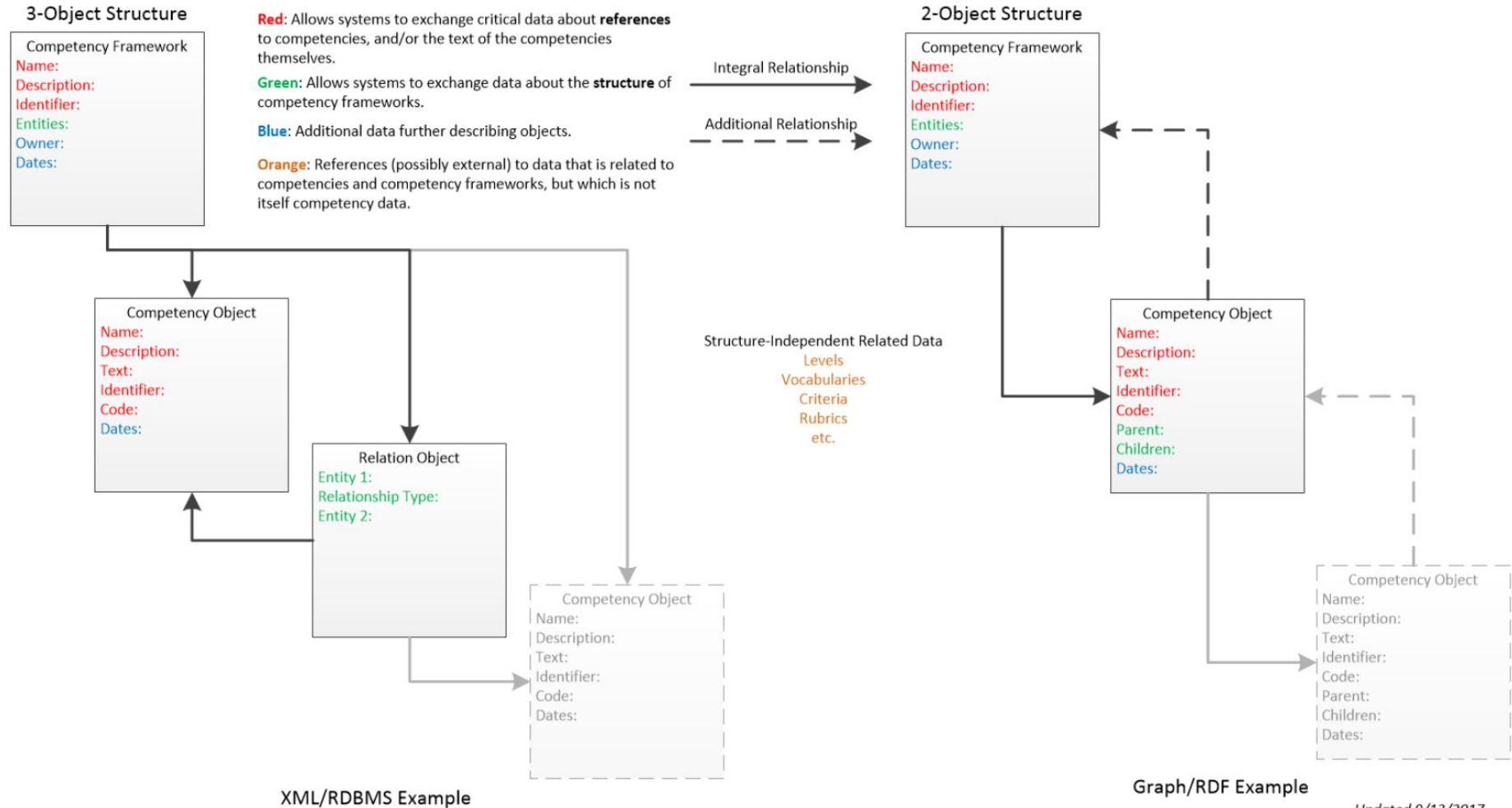
CF Doc, CF Item, CF Association and CF Rubric



Machine Readable Skill Meta Model

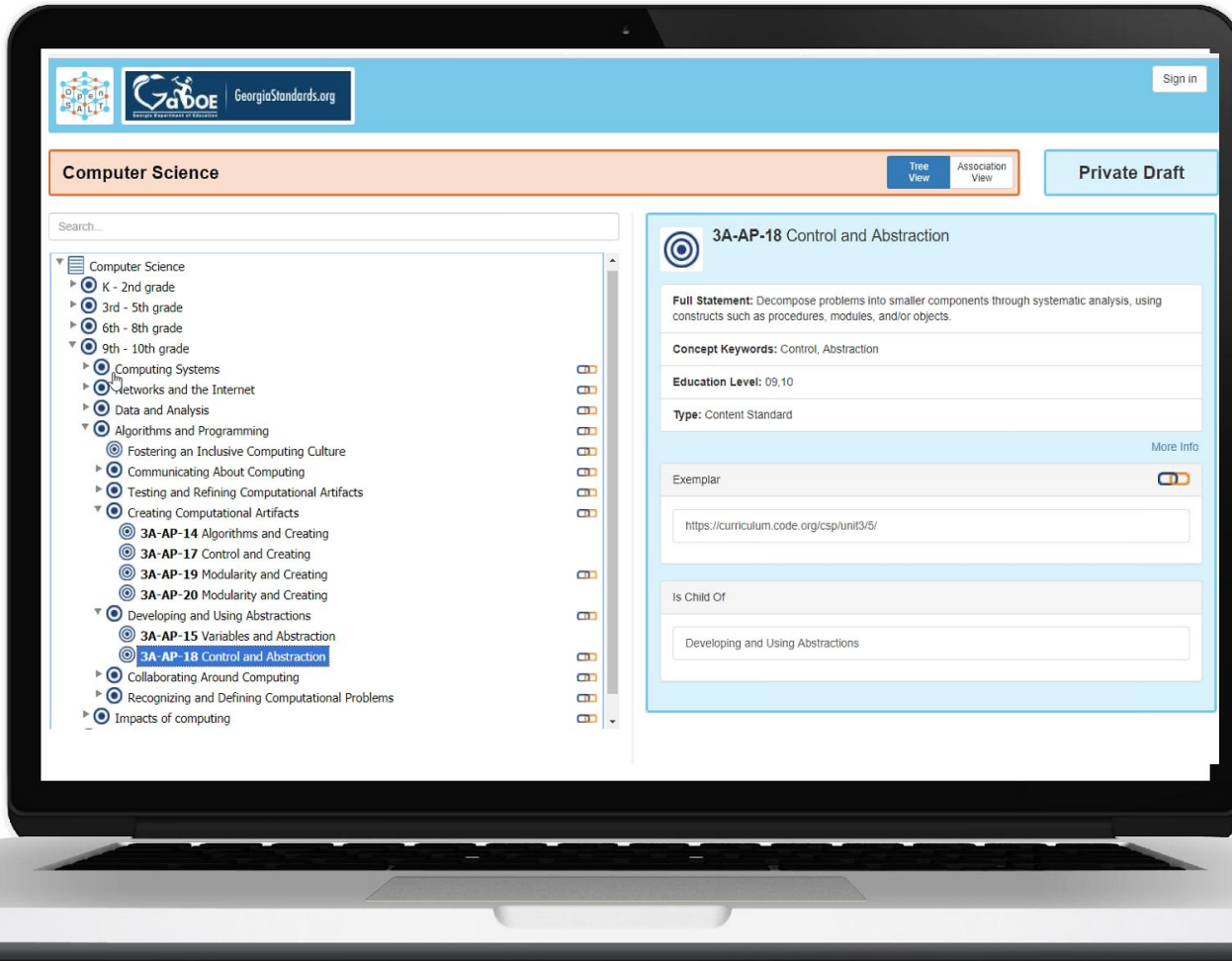
Open Skills Network?

Draft Competency Framework Structures Conceptual Model



Standards Alignment Tool (SALT)

Open source tool to manage CASE





IMS CASE Network

A public-private partnership to support exchange of OER content and support personalized, competency-based learning



IMS GLOBAL
CASE NETWORK

Login

Register



Competency Frameworks

Find framework...

- ▶ ACT, Inc.
- ▶ Alabama Department of Education
- ▶ Alaska Department of Education & Early Development
- ▶ Arizona Department of Education
- ▶ Arkansas Department of Education
- ▶ California Department of Education
- ▶ College Board: AP Computer Science Standards
- ▶ Colorado Department of Education
- ▶ Common Core (CCSSO)
- ▶ Computer Science Teachers Association (CSTA)
- ▶ Connecticut Department of Education
- ▶ Delaware Department of Education
- ▶ Florida Department Of Education
- ▶ Georgia DOE
- ▶ Hawaii State Department of Education
- ▶ Idaho State Department of Education

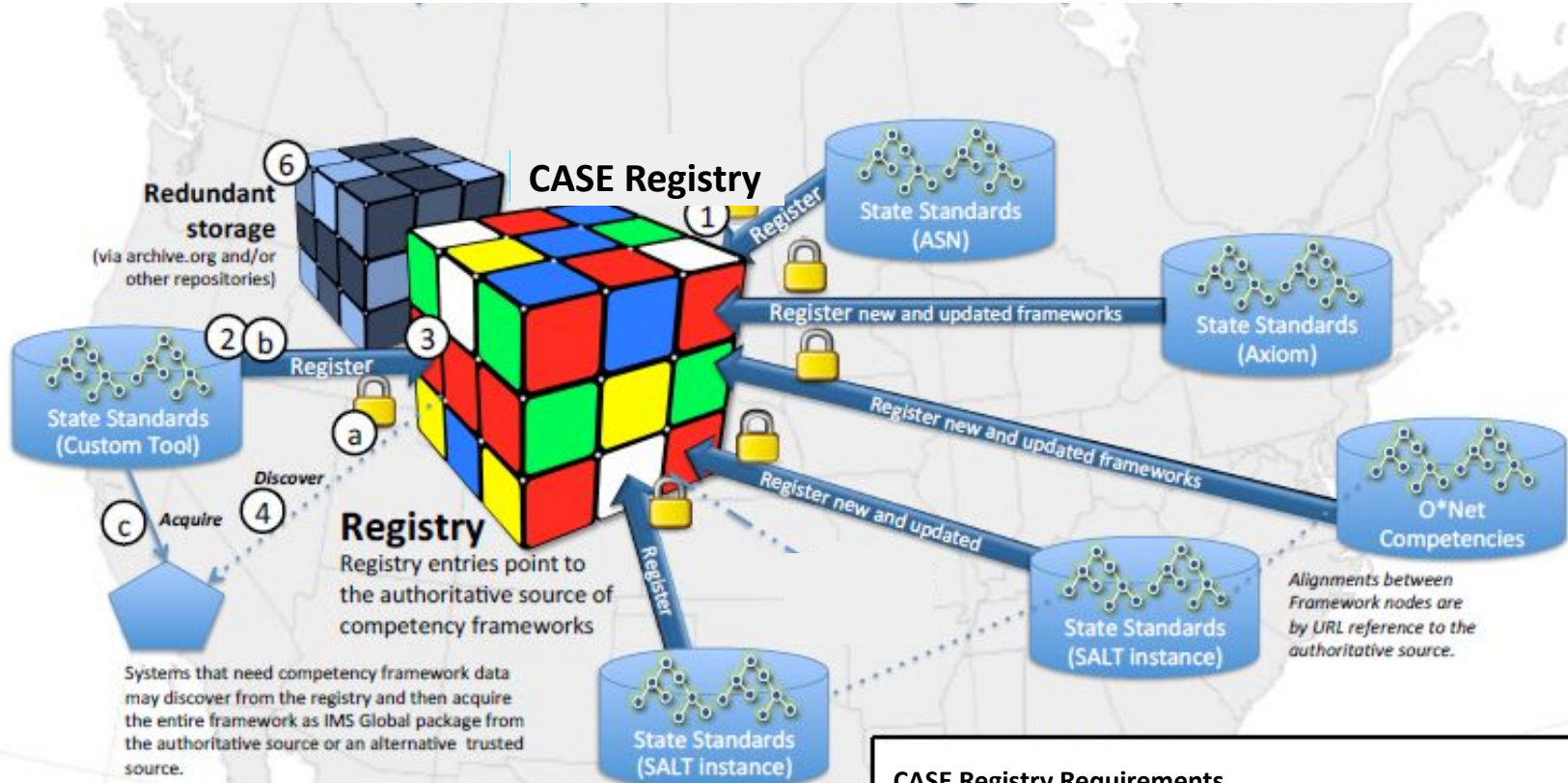
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IMS GLOBAL
Learning Consortium
Better Learning From Better Learning Technology™

IMS CASE Network

A public-private partnership to support exchange of OER content and support personalized, competency-based learning



CASE Server Test Requirements

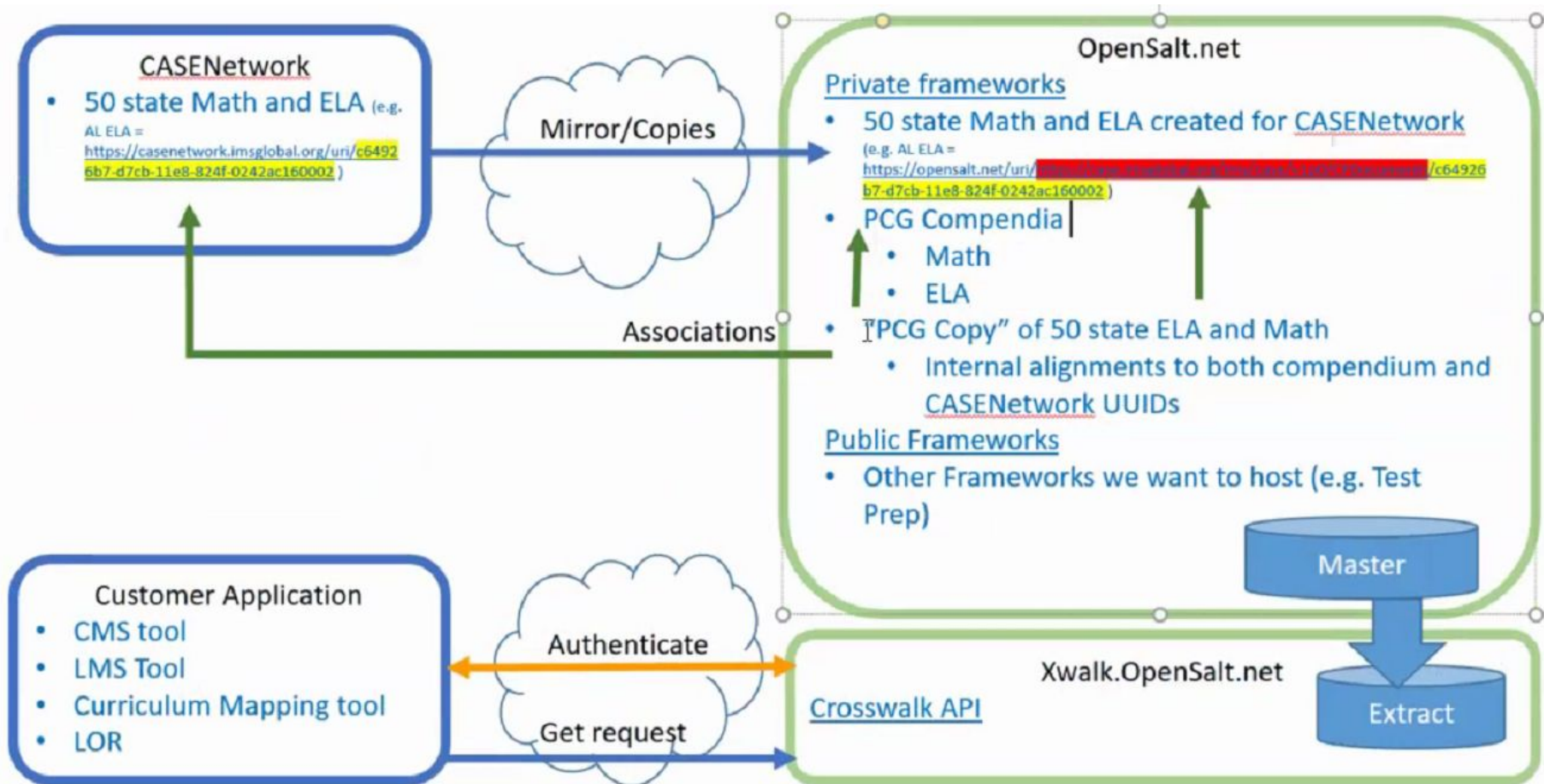
1. IMS Global CASE certified
2. Verified agent of the Registry

Source must publish frameworks as a package in digital format based on IMS Global standard. Only frameworks that are open and available in the standard format may be registered.

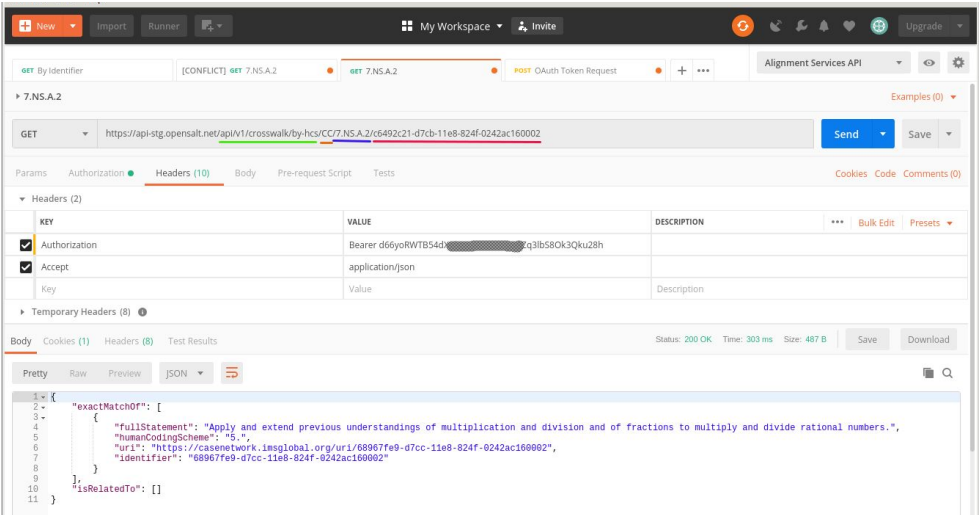
CASE Registry Requirements

1. CCSO helps designate an official contact for each SEA
2. SEA contact designates official state Framework CASE publisher
3. Each state CASE publisher creates official CASE Frameworks
4. CASE Registry mirrors each official CASE Framework and maintains a free trusted data service

Crosswalks and Alignment Services



CASE Crosswalks API



Code

200

Details

Response body

```
{
  "exactMatchOf": [
    {
      "fullStatement": "Ask and answer questions about key details in a text.",
      "humanCodingScheme": "1.",
      "uri": "https://casenetwork.imsglobal.org/uri/6836f2d7-d7cc-11e8-824f-0242ac160002",
      "identifier": "6836f2d7-d7cc-11e8-824f-0242ac160002"
    }
  ],
  "isRelatedTo": []
}
```

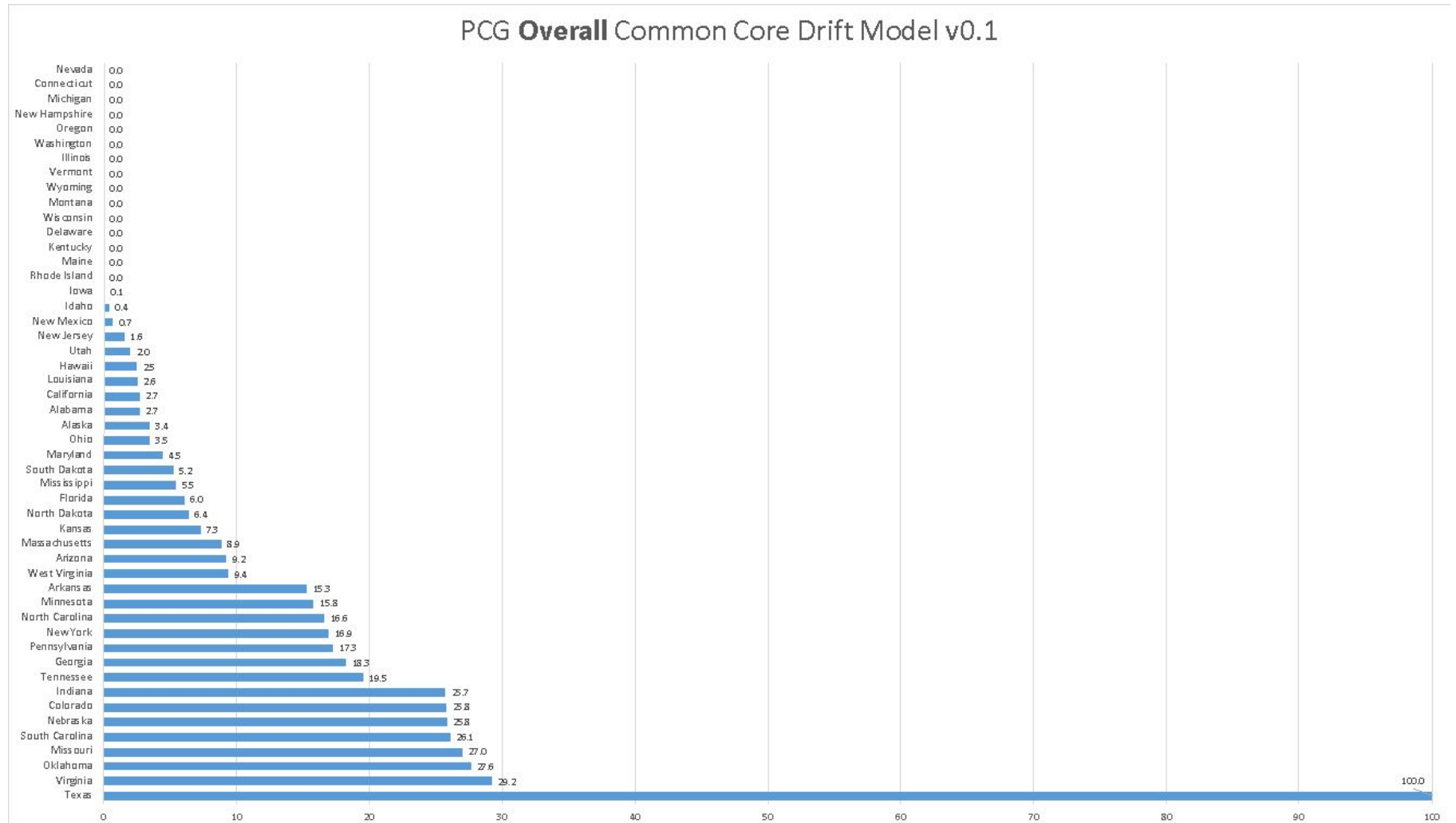
Download

Response headers

```
cache-control: no-cache, private
content-encoding: gzip
content-length: 219
content-type: application/json
date: Thu, 13 Jun 2019 15:22:29 GMT
server: nginx
status: 200
vary: Accept-Encoding
x-content-options: nosniff
```

Responses

Measuring Common Core Drift



Enabling Custom Publishing

NY Current Standard

New York State Next Generation English Language Arts Learning Standards

11-12R1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly/implicitly and make logical inferences, including determining where the text is ambiguous; develop questions for deeper understanding and for further exploration. (RI&RL)

MA Suggested Standard

Massachusetts Curriculum Framework for English Language Arts and Literacy

RI.11-12.1

Cite strong and thorough textual evidence to support analysis of what a text states explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RI.11-12.1

Cite strong and thorough textual evidence to support analysis of what the text says states explicitly/implicitly and as make well logical as inferences drawn from the text, including determining where the text is leaves ambiguous matters develop questions for deeper understanding and for further exploration uncertain. (RI&RL)

CW Grade 11 - ELA - NY

The New York State grade 11 curriculum modules continue to develop students' skills in analyzing complex literary and informational texts as students delve deeply into works by acclaimed authors and historical figures, including classics from William Shakespeare, Virginia Woolf, and Kate Chopin; seminal pieces from W.E.B. Du Bois, Booker T. Washington, and Elie Wiesel; and contemporary literature from Tim O'Brien and Louise Erdrich.

Unit 1: "Then all smiles stopped together."

The first unit begins with a close reading of Robert Browning's "My Last Duchess," in which students examine character development and choices regarding point of view as they analyze the development of central ideas in the poem.

BOOKMARK Reading of "My Last Duchess"

ARTICLE My Last Duchess by Robert Browning

Standard NY

11-12R1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly/implicitly and make logical inferences, including determining where the text is ambiguous; develop questions for deeper understanding and for further exploration. (RI&RL)

Literacy Skills and Habits
Read closely for textual details

Standard NY

11-12R2 Determine two or more themes or central ideas in a text and analyze their development, including how they emerge and are shaped and refined by specific details; objectively and accurately summarize a complex text. (RI&RL)

Literacy Skills and Habits
Question texts during reading to deepen understanding

Standard NY

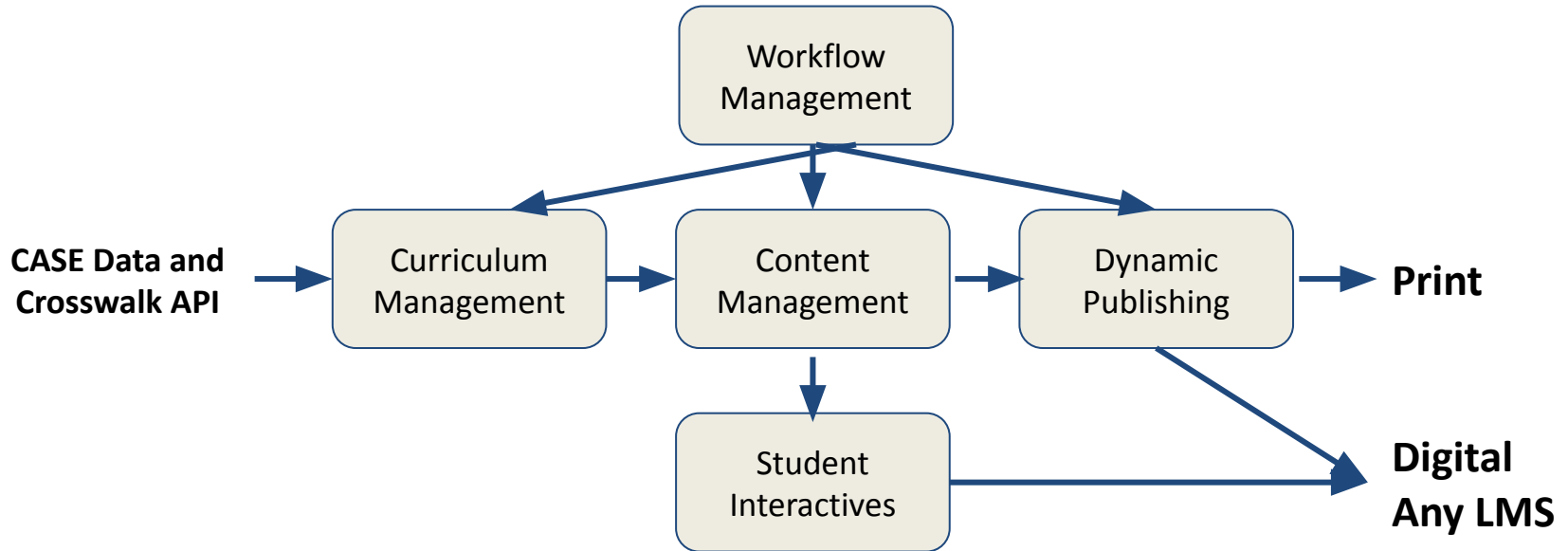
Augmented Google/LMS Experience

Dynamic OER Content Curation and LTI Resource Search

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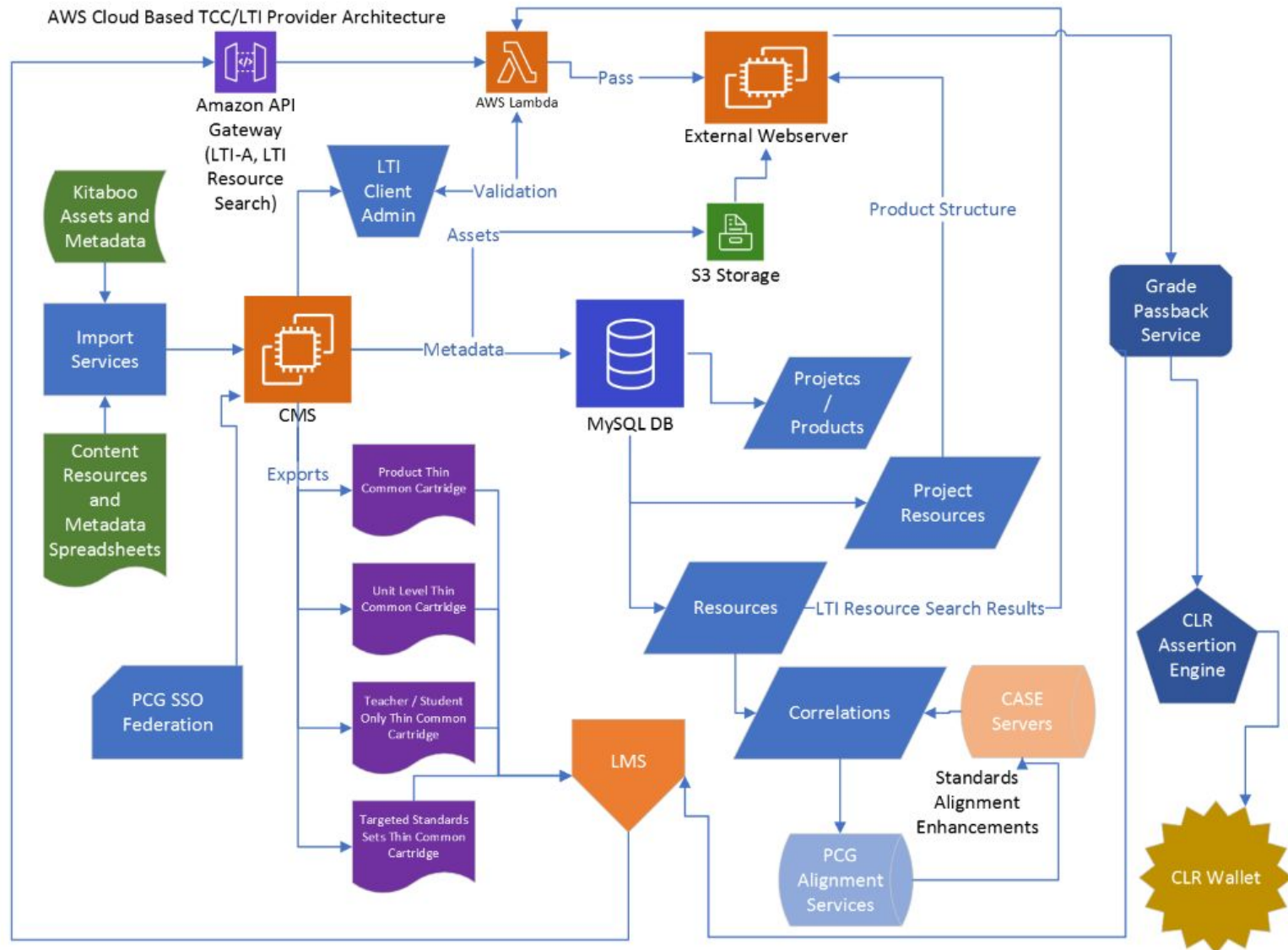
Custom Publishing Workflow

Dynamic OER Content Curation and LTI Resource Search



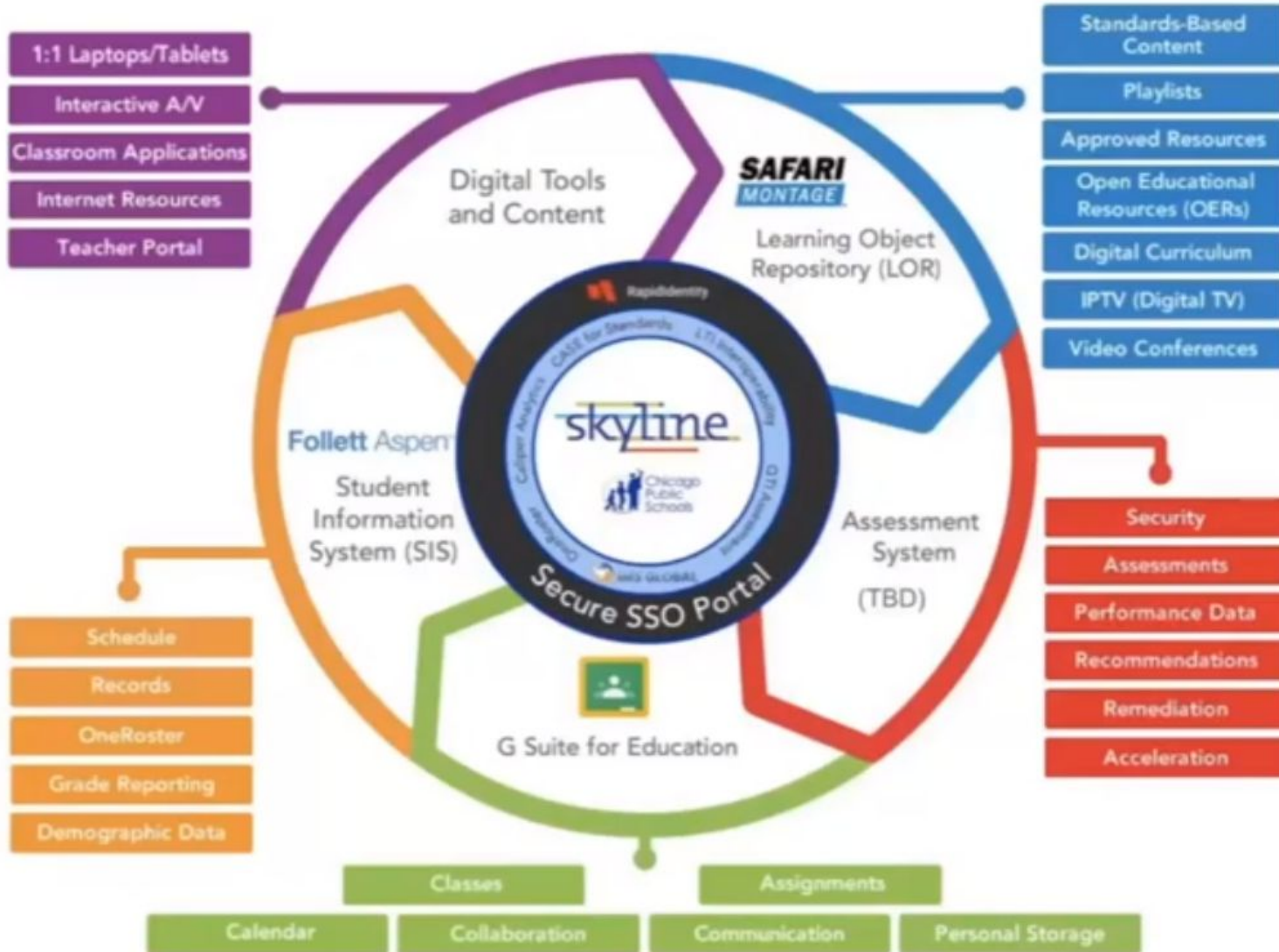
Digital Publishing Workflow

Dynamic OER Content Curation and LTI Resource Search



CASE Study: Chicago

Dynamic OER Content Curation and LTI Resource Search



CASE Study: Asia Pacific

Dynamic OER Content Curation and LTI Resource Search



UNESCO Bangkok
Asia and Pacific Regional Bureau for Education

United Nations
Educational, Scientific and
Cultural Organization

Sustainable
Development
Goals

Search

*A A A

"Building peace in the minds of people"

About us Education Natural Sciences Social and Human Sciences Culture Communication and Information UNESCO Myanmar

Education / Quality of Education / NEQMAP



NEQMAP

The Network on Education Quality Monitoring in the Asia-Pacific (NEQMAP)



The Southeast Asia Primary Learning Metrics Program: Thinking Globally in a Regional Context

A program focused on building government capacities to monitor student learning in order to better inform policy and practice of education systems across ASEAN countries

The Southeast Asia Primary Learning Metrics Program: Thinking Globally in a Regional Context

Latest NEQMAP



Assessment for Learning - bringing the attention back to learning

08 Jul 2019

Many schools and education systems still place significant priority on measuring learning outcomes with scores, grades and marks. But this focus and emphasis often misses a bigger picture, and doesn't take into account the process of learning. Assessment...



NEQMAP

Network on Education Quality Monitoring in the Asia Pacific

Publications

View all >

**NEQMAP 2020 Thematic Review: High-Stakes Examinations and Large-scale Learning Assessments in Times of Emergencies and Crises**

06 Jan 2021

**NEQMAP 2020 Thematic Review: Formative Assessments and the Continuity of Learning During Emergencies and Crises**

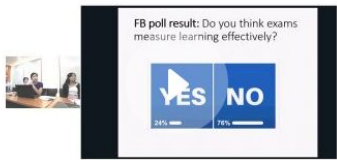
06 Jan 2021

**Large-scale Learning Assessments in Asia-Pacific: A Mapping of Country Policies and Practices**

09 Dec 2020

Multimedia

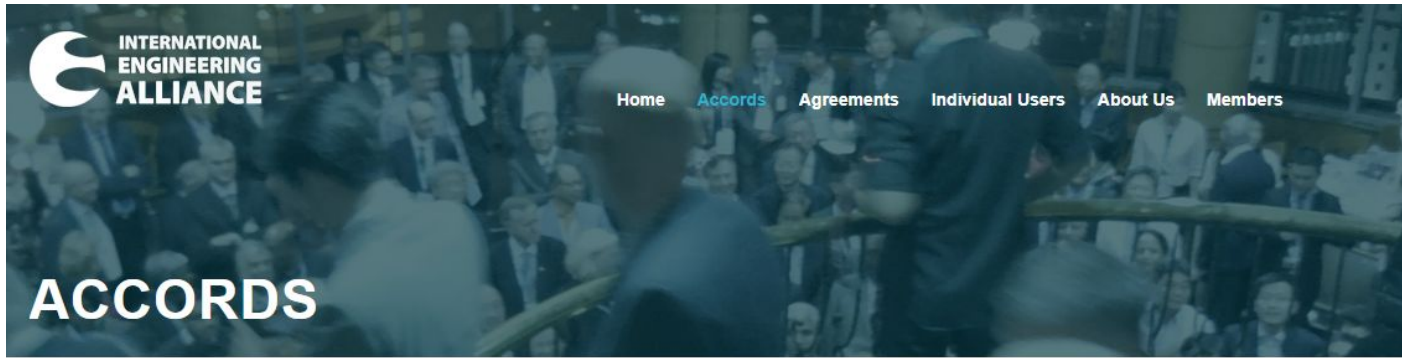
View all >

**FB poll result: Do you think exams measure learning effectively?**

YES 21% **NO** 79%

Asia Pacific: Qualification Framework

Dynamic OER Content Curation and LTI Resource Search



WASHINGTON ACCORD

SIGNATORIES

EXECUTIVE COMMITTEE

ACKNOWLEDGEMENT OF
SIGNATORY & PROVISIONAL
STATUS

HOW TO APPLY

WASHINGTON ACCORD

THE WASHINGTON ACCORD IS AN INTERNATIONAL AGREEMENT BETWEEN BODIES RESPONSIBLE FOR ACCREDITING ENGINEERING DEGREE PROGRAMMES.

Originally signed in 1989, the Washington Accord, is a multi-lateral agreement between bodies responsible for accreditation or recognition of tertiary-level engineering qualifications within their jurisdictions who have chosen to work collectively to assist the mobility of professional engineers.

As with the other accords the signatories are committed to development and recognition of good practice in engineering education. The activities of the Accord signatories (for example in developing exemplars of the graduates' profiles from certain types of qualification) are intended to assist growing globalization of mutual recognition of engineering qualifications. The Washington Accord is specifically focused on academic programmes which deal with the practice of engineering at the professional level.

The Accord acknowledges that accreditation of engineering academic programmes is a key foundation for the practice of engineering at the professional level in each of the countries or territories covered by the Accord.

The Accord outlines the mutual recognition, between the participating bodies, of accredited engineering degree programmes. It also establishes and benchmarks the standard for professional engineering education across those bodies..

Currently there are twenty signatories that make up the Washington Accord.

There are also eight organisations, who hold provisional signatory status

↓ Download: 25 Years of the Washington Accord (pdf)

OER Facts

Dynamic OER Content Curation and LTI Resource Search

Open Education Resource Facts	
Serving Size:	1 Book
One serving per volume.	
Educational Contents	% Daily Value*
Commercial Content:	60%
OER Content:	30%**
Public Domain Content:	10%**
Total Fat:	0%
Sodium:	0%
Dietary Fiber:	14%
<i>This book is gluten free but may have been produced in an institution containing nuts.</i>	
**Contents may be monetized during shipping.	

CLR/ILR

Integrated Learner Records

- The idea of a “**Comprehensive Learner Record**” evolved out of work by the American Association of Collegiate Registrars and Admissions Officers (AACRAO) collaboratory, the Mozilla Open Badge specification, and prior work to define an “Extended Transcript.” The IMS CLR specification enables multiple providers to create, transmit, and render a learner’s achievements in a digital, machine-readable format that can be curated and shared as verifiable digital credentials.
- In parallel, the W3C has published a draft data model and set of standards for Verifiable Credentials. The **W3C Verifiable Credentials** for Education work group has published a white paper.
- Also, in parallel, the US Military has begun work on a **Universal Learner Record** as part of its Total Learning Architecture
- More recently, the US Chamber of Commerce and American Workers Policy Advisory Board have promoted what IEEE has begun work on, an **Integrated Learner Record**. The ILR digitized information is intended to be stored in a distributed digital “**wallet**” verified on blockchain that provides security access and control to the learner and their guardian.

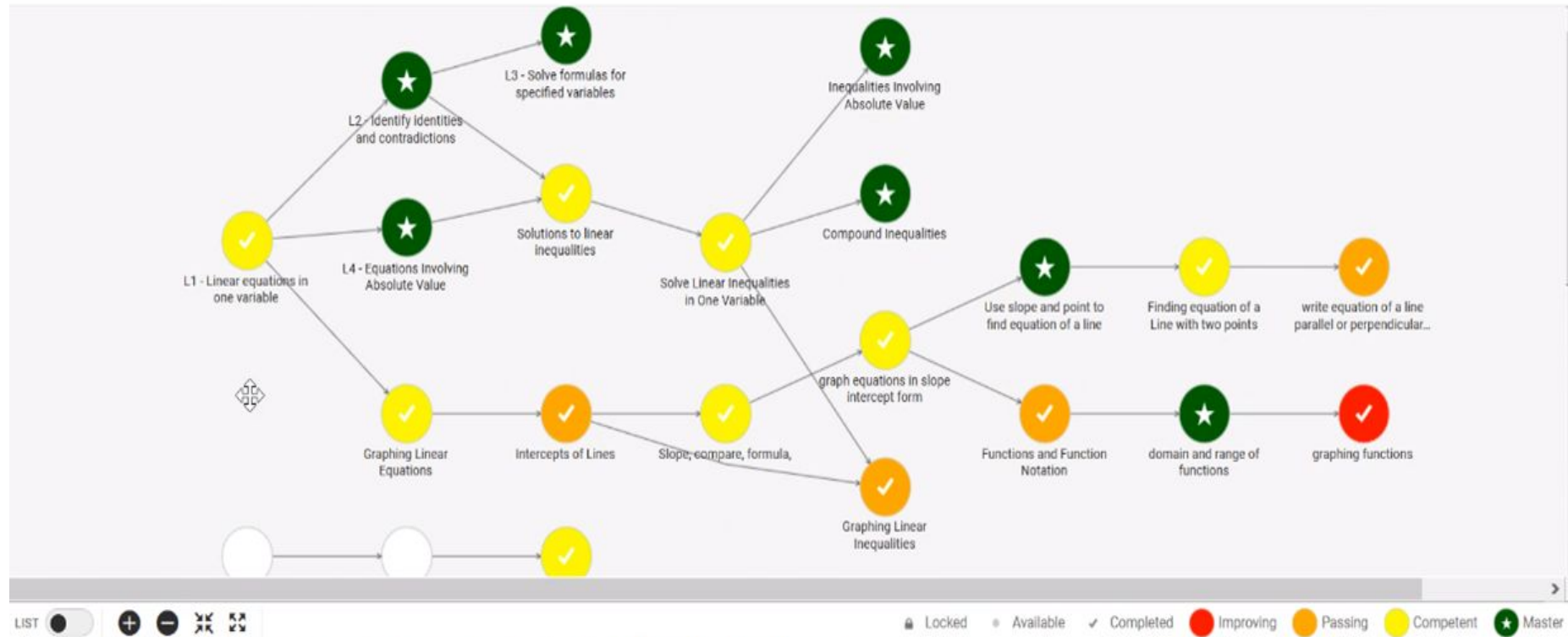
IMS CLR Key Concepts

Comprehensive Learning Record	
Assertion	Achievement
Learner (PII)	> Credential Engine CTDL
Issuer	> CASE 1.0 Competency
Endorsement	> Open Badge 2.0 BadgeClass
Evidence	
Result	
Verificaion (Hosted/Signed)	

1. A **learning record** contains a set of **Assertions** about a **Learner**. The Assertion can include **Evidence**, a specific **Result**, and some type of **Verification**.
2. Generally (but often not in the case of a portfolio), each **Assertion** is made by an **Issuer** in relationship to a described **Achievement**, which could be accomplished by more than one **Learner**. There are many types of Achievements that include:
 - a. **Assessment Results**
 - b. **Course Grades**
 - c. **Program Credentials and Diplomas**
 - d. **Competencies**

Learning Pathways

IMS Global CASE, Credential Engine CTLD, and OSN RSDs



Achievement Assertions

A common conceptual model for IMS CLR, IEEE ILR, and W3C Edu

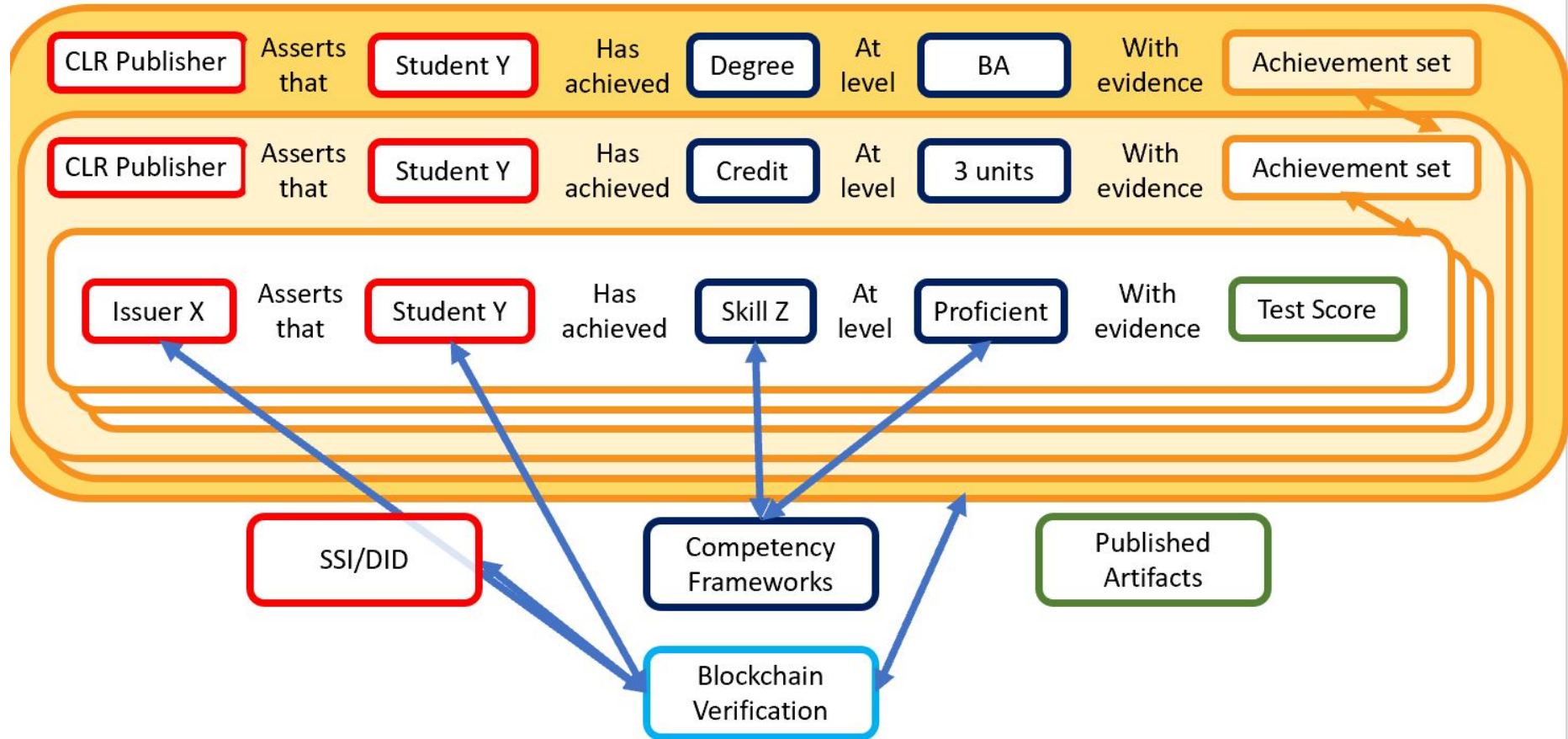
Learner Record Set	
Learner Record	
Assertion	Achievement
Learner (PII)	> CASE/RSD/ESCO Skill
Issuer	> CTDL Credential
Evidence/Time	> OB BadgeClass
Verification	Achievement Level
Verification	

I,	assert that	demonstrated	at	with
Issuer	Learner	Achievement	Level	Evidence

1. **Learner Record.** In a learner record, the core record is a distinct **assertion/claim** that could have **evidence** and/or an **achievement** to a **level** described in a **rubric**.
2. **Achievement (Description).** An achievement can be described as a shared record that can be set as a goal and/or accomplished by more than one learner and, therefore, be compared and exchanged. **Rubrics** can be used to define levels associated with the achievement definition (e.g. “approaches,” “meets,” “exceeds”).
3. **Assertion/claim.** The attestation made by an Issuer about a Learner regarding an Achievement. The Assertion may also include associated evidence, results, or other metadata regarding a specific Achievement.
4. **Evidence.** Information supporting the issuance of an assertion such as URL to an artifact produced by the Learner. Evidence can be curated into **portfolios** and used to generate **assertions**.
5. **Learner Record Sets.** Sets of achievement assertions can be grouped into immutable **transcripts** and/or can be curated into learner record sets.
6. **Context.** Learner records exist as linked data related to other learner records and sets and aligned with other relevant objects like CASE and CTDL.

IMS Global CLR Achievement Assertion

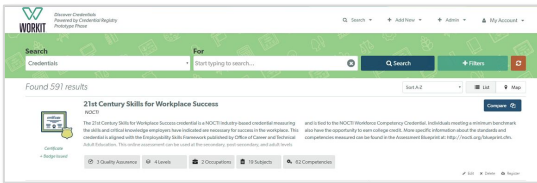
Based on Open Badge 2.0 and extended for all formal and informal learning



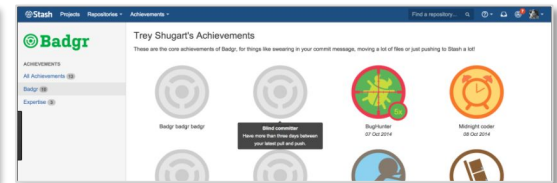
Credly



Tallo



Badgr



Comprehensive Learner Record (CLR)

I,

assert that

possesses

at

with



COMPETENCY

LEVEL

EVIDENCE

CONFIDENCE [0,1]

made at

TIMESTAMP

expiring at

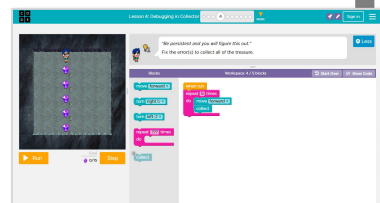
TIMESTAMP

IEEE ILR - Integrated, International, Interoperable, Learner and Employment Records

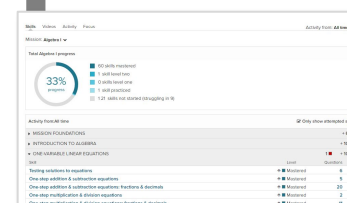
GA Virtual



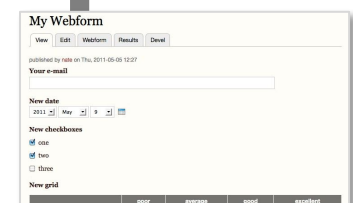
Code.Org



Harvard CS50 EdX



I did it!



IMS CLR Logical Model

CLR

publisher
learner
records
assertionRecord
achievement
assertionRecord
achievement
achievements
achievement
issuer
achievement
issuer
associations
association
association

CLR Model

type: ComprehensiveLearnerRecord
publisher: Profile
learner: Profile
record: AssertionRecord
issuedOn: datetime
recipient: IdentityObject
verification: VerificationObject
endorsement: Endorsement
revoked
revocationReason
achievement: AchievementDescription
evidence: Evidence
results: Result
type: enum
value: string
startDate: datetime
endDate: datetime
creditsEarned: num
term: string
licenseNumber: string
role: string
association: Association
createdAt: datetime

Objects:

Profile

type
name: string
email: string
studentId: string
telephone: num
description: string
image: ImageObject
sourcedId: string
url: url
address: Address
publicKey: CryptographicKey
verification: VerificationObject
revocationList: IRI

Address

type: PostalAddress
addressLocality: string
postalCode: string
streetAddress: string

Association

sourcedId: string IRI
targetId: string IRI
associationType: enum string

AchievementDescription

type: enum
typeLabel: string
name: string
description: string
issuer: Profile
resultDescriptions: ResultDescription
type: enum
resultMin: string
resultMax: string
criteria: CriteriaObject
image: Image
tags: string
alignment: AlignmentObject
level: string
specialization: string
fieldOfStudy: string
humanCode: string
creditsAvailable: num

Enums:

AchievementDescriptionType

CASECompetencyStatement
BadgeClass
IMSAssessmentResult
CTDLCredential
PESCTranscript
Achievement

ResultTypes

Result
Raw Score
Scaled Score
Performance Level
Letter Grade
Percent
Predicted Score
GradePointAverage

AssociationTypes

Equivalent
RelatedTo
IsChildOf
Precedes
IsPartOf
ReplacedBy

*Not all objects shown

Co-Labs

1. Broward Equity Co-Lab

- a. EdPlan
- b. EdPlan Wallet
- c. ELA/Math Adoption/Tutoring
- d. Courageous Conversations About Race

2. ND Co-Lab

- a. Phase 1
- b. Phase 2
- c. Phase 3

3. New Co-Labs

- a. GA
- b. MI
- c. VT
- d. NJ

4. ETS Co-Lab

- a. Praxis Test Prep

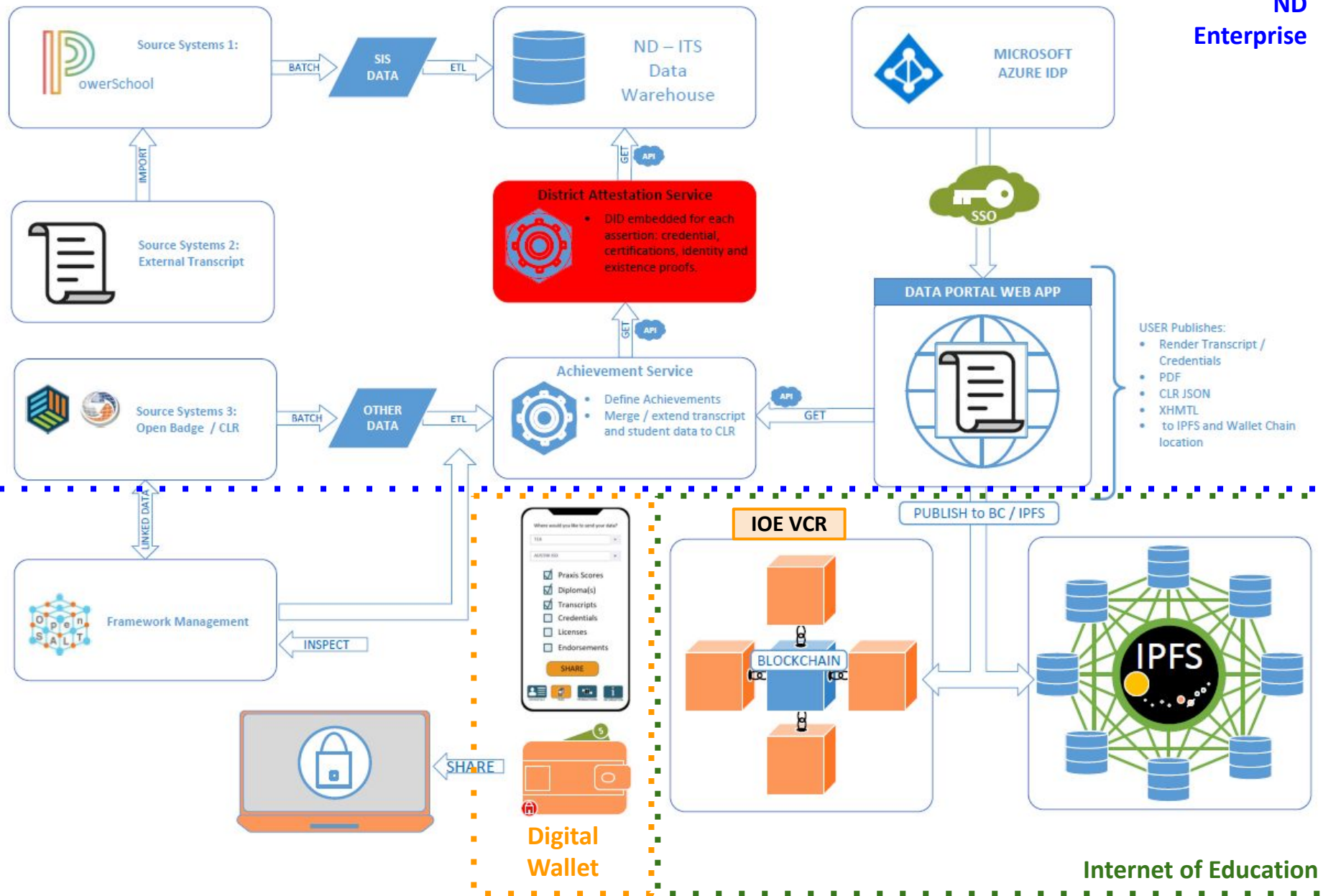
ASU Trusted Learner Network

Private/Permissioned Blockchain



North Dakota ILR Reference Model - Draft 6-29-20

ND
Enterprise



Upload New Credential

Credential Type*

Holder DID*

Credential Type / Source

Holder DID

Drag and drop files here or Browse

The file size cannot exceed 1MB. Please upload one file at a time.

Reset

Upload Credential

Credentials in the LCN

Credential Name	Credential Type	Credential ID	Holder DID	Confer Date	Issue Date	Expiry Date	Status
College Algebra	CourseCredential	f45440bf-620d-4a1f-a4ca-3c275038d46f	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Fund of Public Speaking	CourseCredential	2e2b6b96-18db-4aa2-a95c-9e9672f63214	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Global Studies	CourseCredential	df649bd8-3c50-407a-8504-1148fa91bff6	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Global Studies	CourseCredential	890fa977-a870-4027-8427-907e6da55ff9	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Physical Science	CourseCredential	4b7784d1-278c-44c7-952a-c4c33c930c14	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Physical Science	CourseCredential	9ea5626e-2a9f-4cfb-836d-2168e80630b9	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
PE 9	CourseCredential	d6843d68-892c-4678-83fb-1712a911a4a9	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Algebra I	CourseCredential	13da4d42-087b-45b9-96b1-13ceda6f4b6	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Algebra I	CourseCredential	cb1b34e6-4801-491d-abd2-eb86d7067ffc	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued
Career Ed	CourseCredential	084dbbec-ec92-4104-9d70-5d2a261f6e15	did:lcnc62fce161-ca87-4cf7-9f72-ce815d24d324	Jul 16, 2020	Jan 5, 2021		Issued

Items per page: 10

1-10 of 482 items

1

of 49 pages

Guest)

2

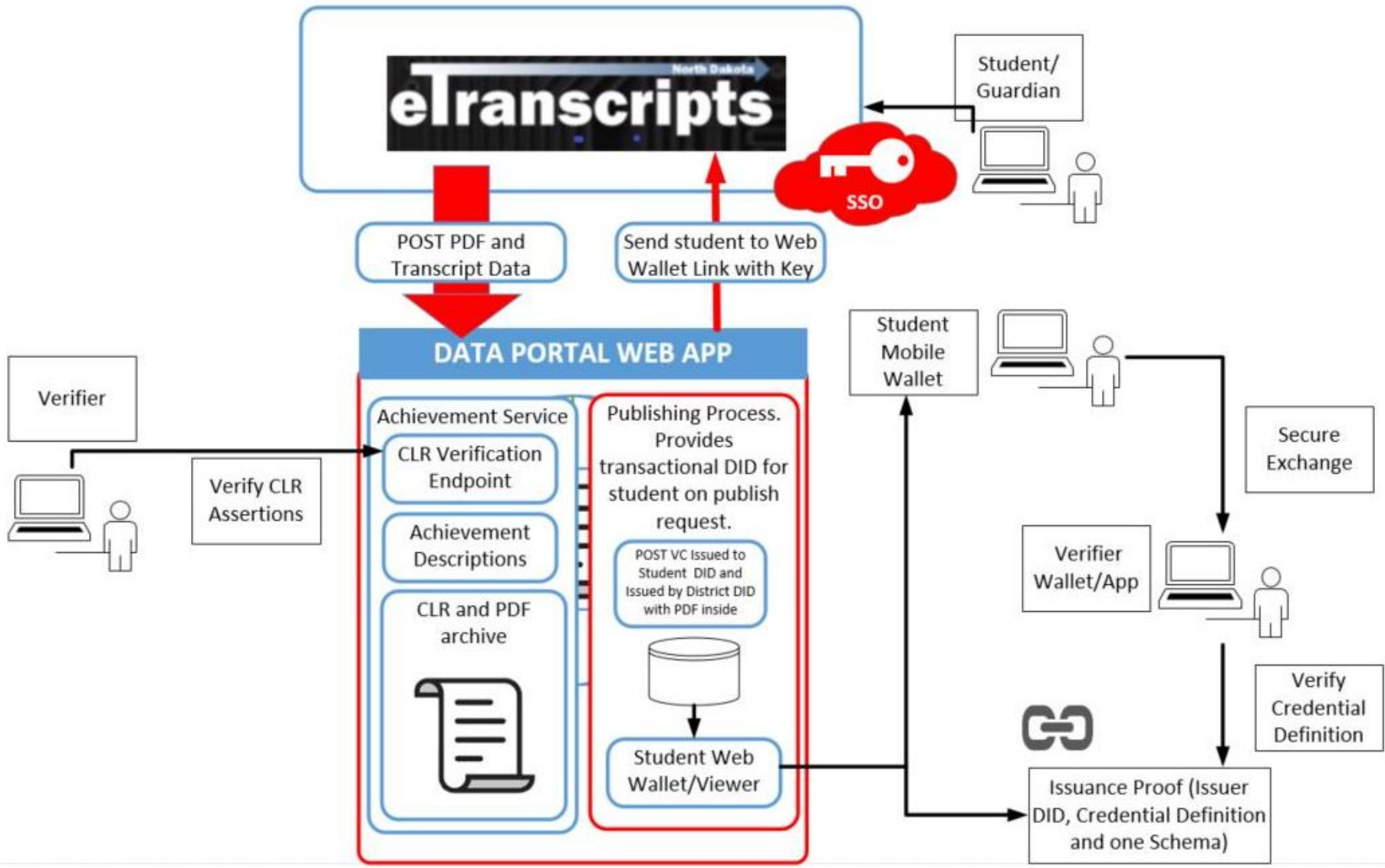
TC

Rick Goldgar (Guest)

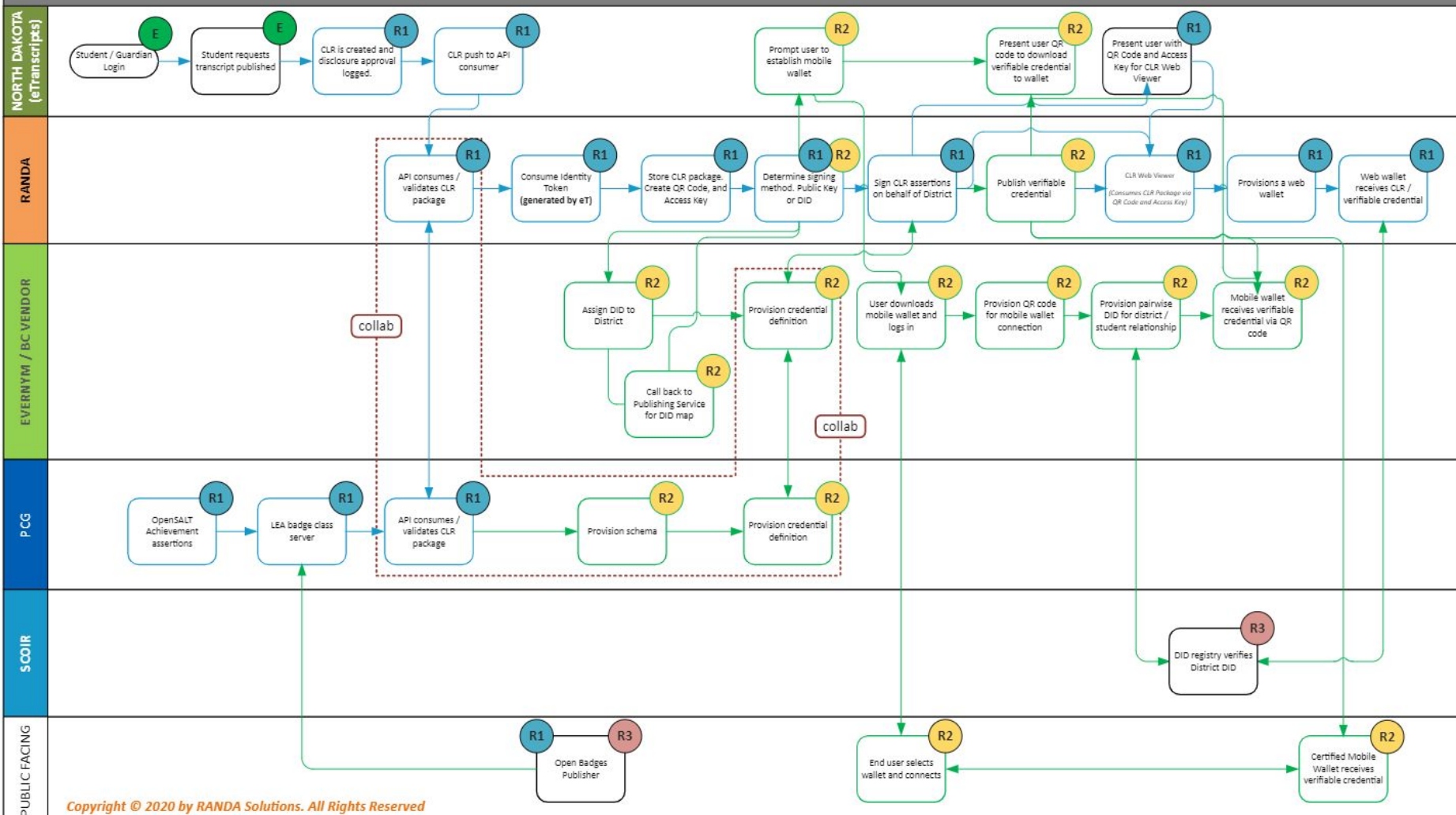
Marks, Joshua

JK

John Kirby (IBM) (Guest)



WBS - NORTH DAKOTA BLOCKCHAIN TRANSCRIPT



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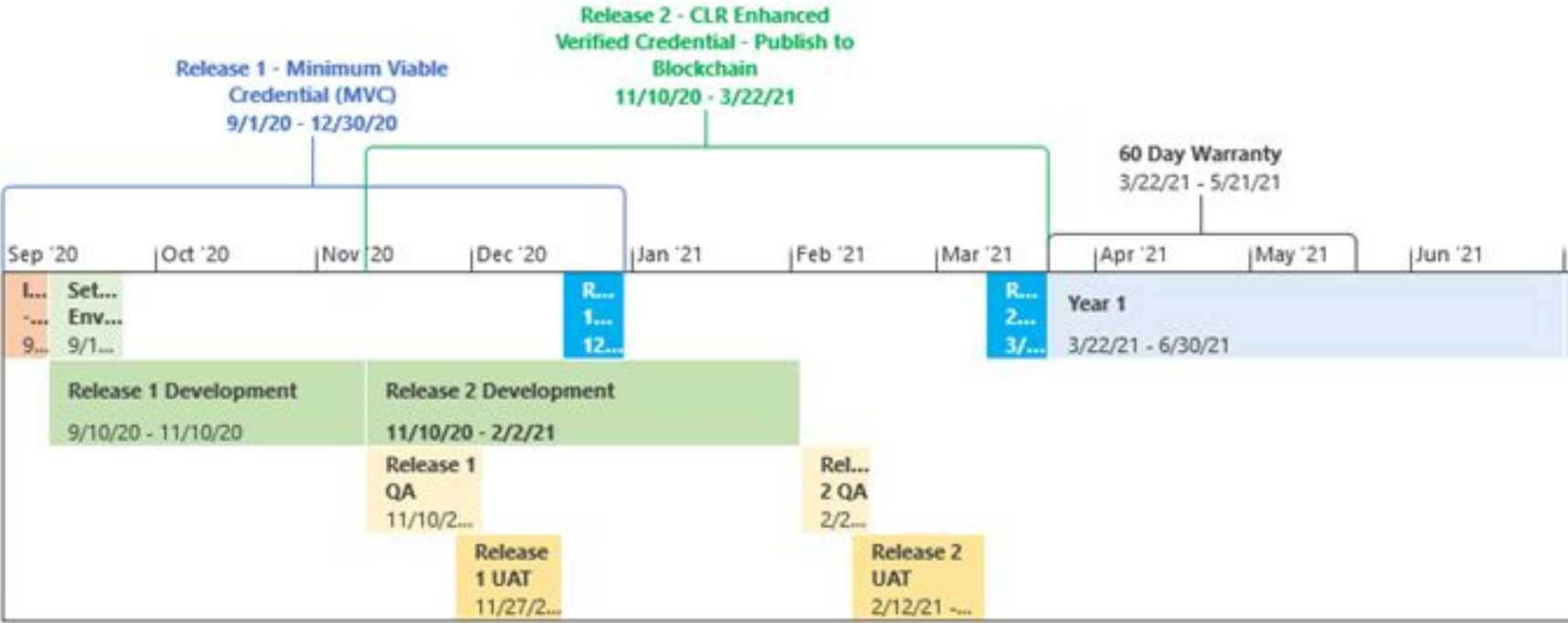
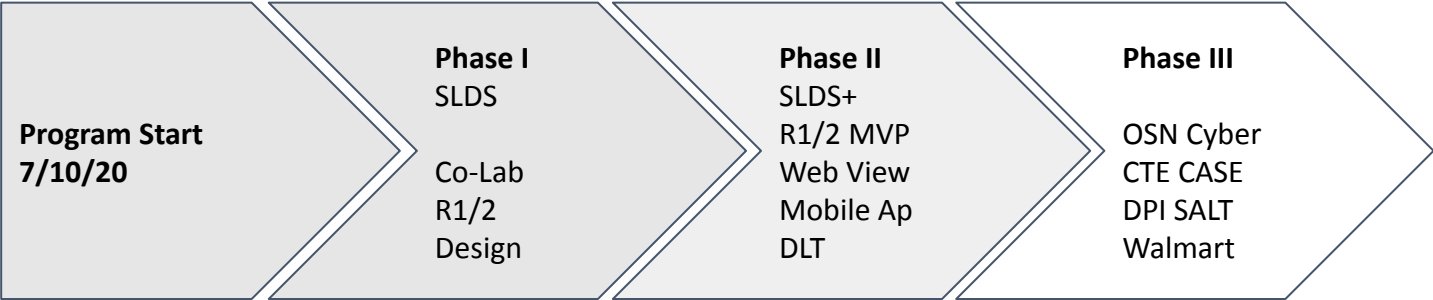
North Dakota – Design Discussion

DATE
13 AUGUST 2020

DRAWN BY
RANDA SOLUTIONS, Inc.

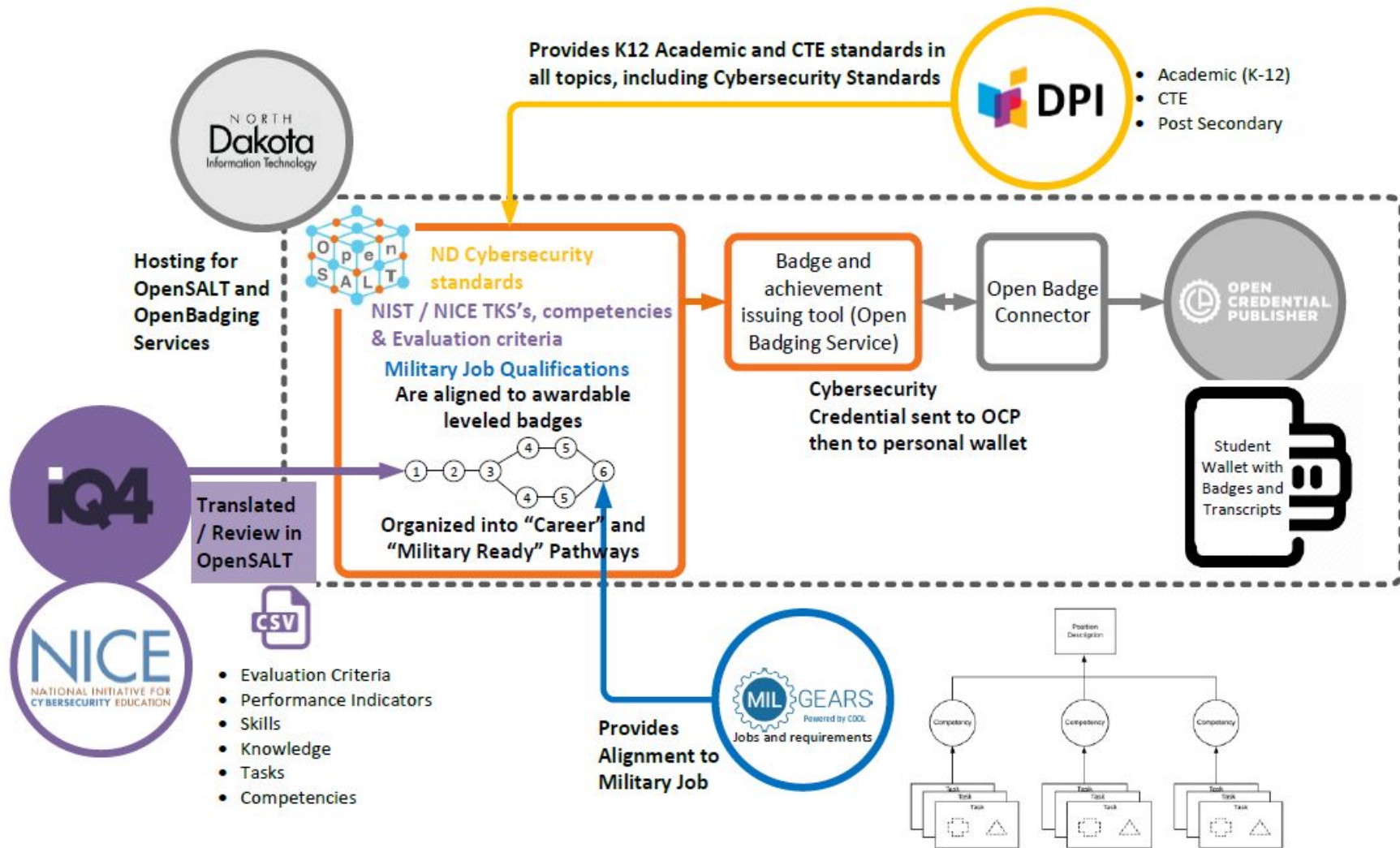
ND ILR Roadmap

Open Credential Publisher

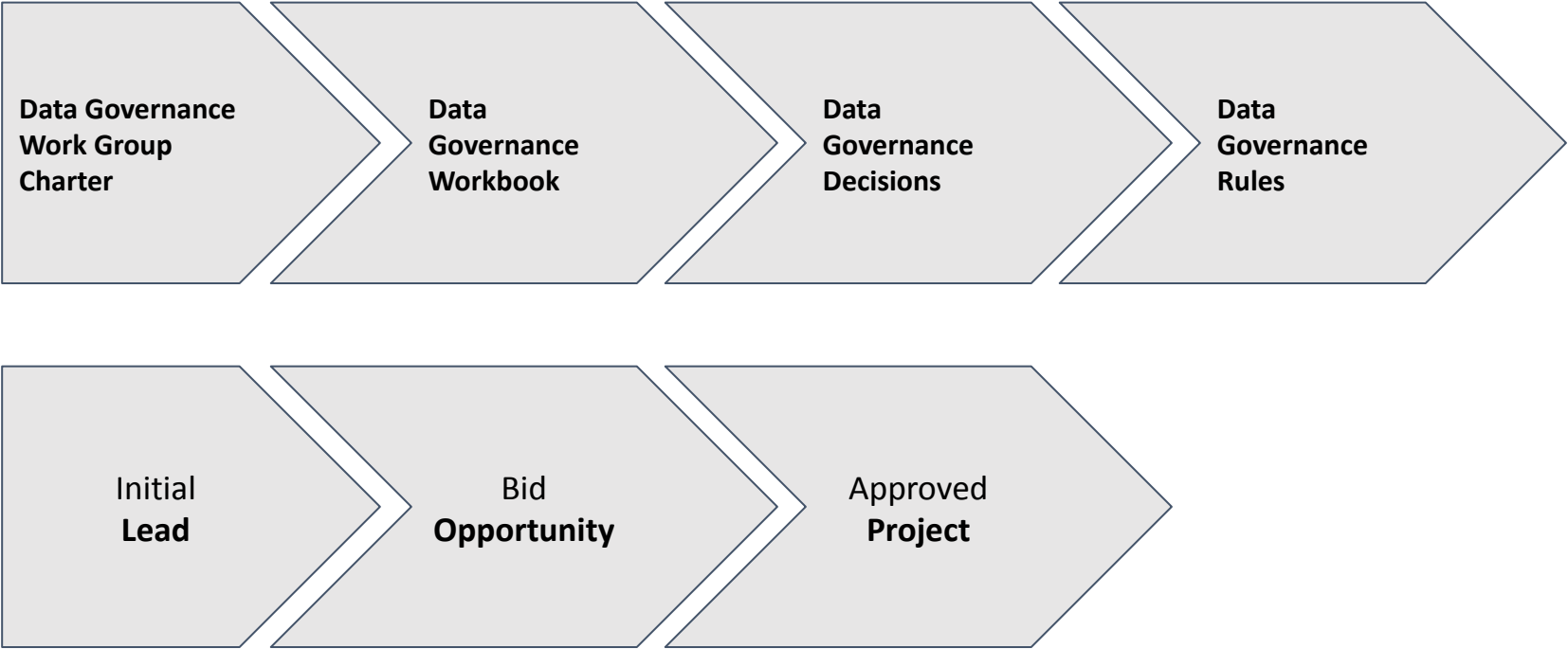


ND OCP Phase III

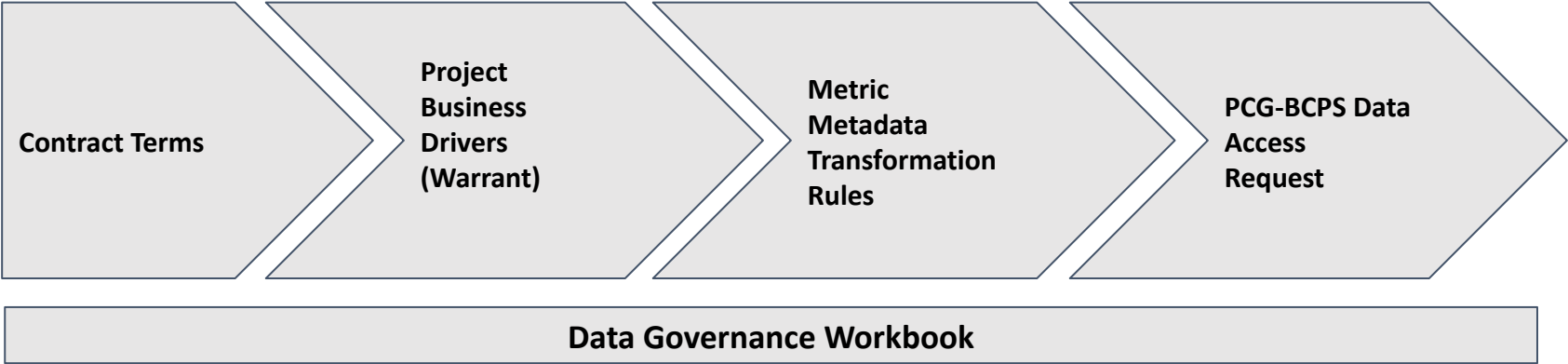
Open Credential Publisher



IEEE Roadmap



Broward Data Access Request



ND ILR Open Credential Publisher

IEEE SA Open ILR Reference Model



**OPEN
CREDENTIAL
PUBLISHER**

 Credentials

 Profile

 Logout

Your CLR Links

A link is a URL you can share with people that lets them see your CLR. The people that click on the link will only be able to see the one CLR you select. You can see how many times people have displayed your CLR in the table below.

[Create a new link](#)

CLR				Link		
	Publisher	Name	Published	Sharable Link	Display Count	Nickname
Upload	Bismarck High School	Student Transcript	12/17/2020	https://localhost:44392/Links/Display	1	Student Transcript Delete

[Back to Dashboard](#)

ND ILR Open Credential Publisher

IEEE SA Open ILR Reference Model



OPEN
CREDENTIAL
PUBLISHER



Credentials



Profile



Logout

Your CLR Links

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Upload	Bismarck High School	Student Transcript	12/17/2020	https://localhost:44392/Links/Display	1	Student Transcript Delete

[Back to Dashboard](#)



ND ILR Open Web Wallet

IEEE SA Open ILR Reference Model

The screenshot shows the CLR Wallet dashboard for a user named Jenna Robertson. The dashboard is divided into several sections: a user profile on the left, a 'Recent Updates' section in the middle, a 'New Data' section on the right, and a 'Data Highlights' section on the far right. At the bottom, there is a 'Credentials' section with filters and a search bar. The top navigation bar includes links for 'Credentials', 'Folio', 'Transactions', and 'Logout'.

CLR WALLET Credentials Folio Transactions Logout

Jenna Robertson
TNED2350687

EDUCATION
Bismarck High School

GRADUATION
May 2022 (expected)

DOB
February 12, 2020

ACTIVE CREDENTIALS
39

DASHBOARD

Recent Updates

- 07.13.2020 | 07:30 PM
Your portfolio database was validated and is ready for transactions.
- 06.24.2020 | 06:20 PM
History 11 was validated by Bismarck High School.
- 06.22.2020 | 11:20 AM
The Khan Academy Algebra Polynomial certification was updated from Khan Academy portal.

New Data

- English 11**
This credential is validated and was updated to your profile.
- AP Calculus**
This credential is validated and was updated to your profile.
- Physics STEM Certification**
This credential is validated and was updated to your profile.

Data Highlights

Graduation
View scores and test results.
[VIEW CREDENTIAL](#)

ACT/SAT TEST
View the latest score from January 22, 2020.
[VIEW CREDENTIAL](#)

Credentials
VIEW: [ALL](#) | CATEGORY

CREATE FOLIO

FILTER BY:

Grade Level: **Grade 11** x **Grade 12** x **Grade 09** x

ISSUER **TERM** **DATE ISSUED**

SEARCH

3 of 12

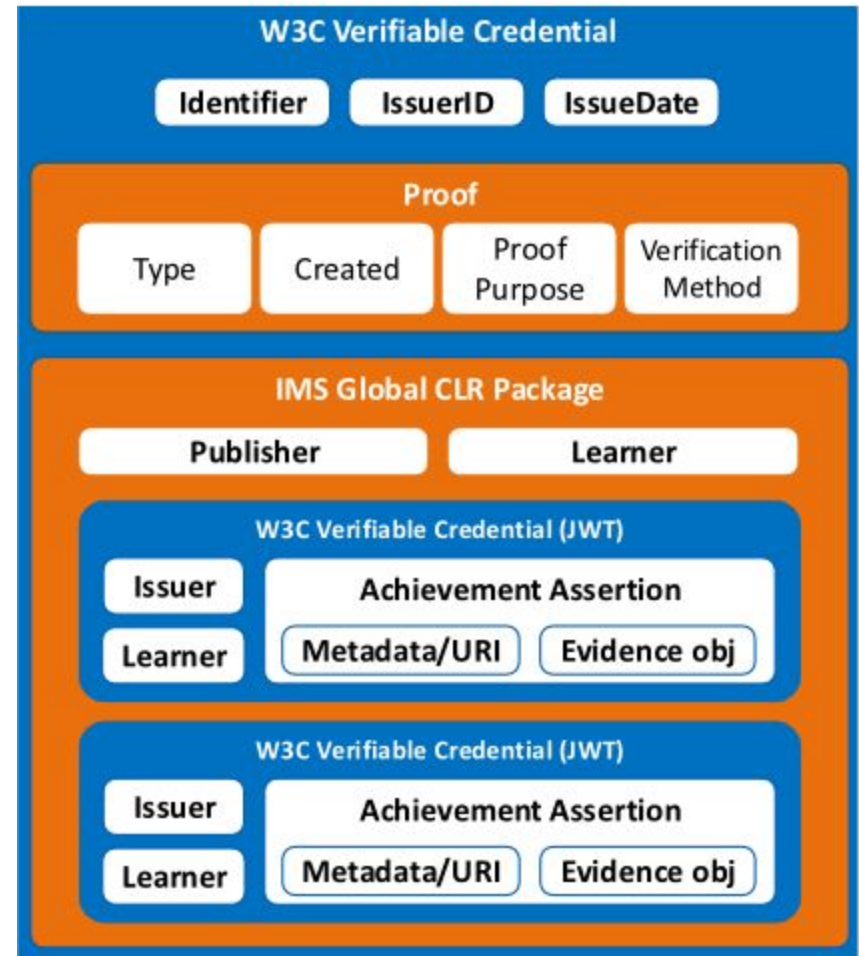
ND ILR Open Web Wallet - Identity Proofing

IEEE SA Open ILR Reference Model



LER Wrapper vs OCP

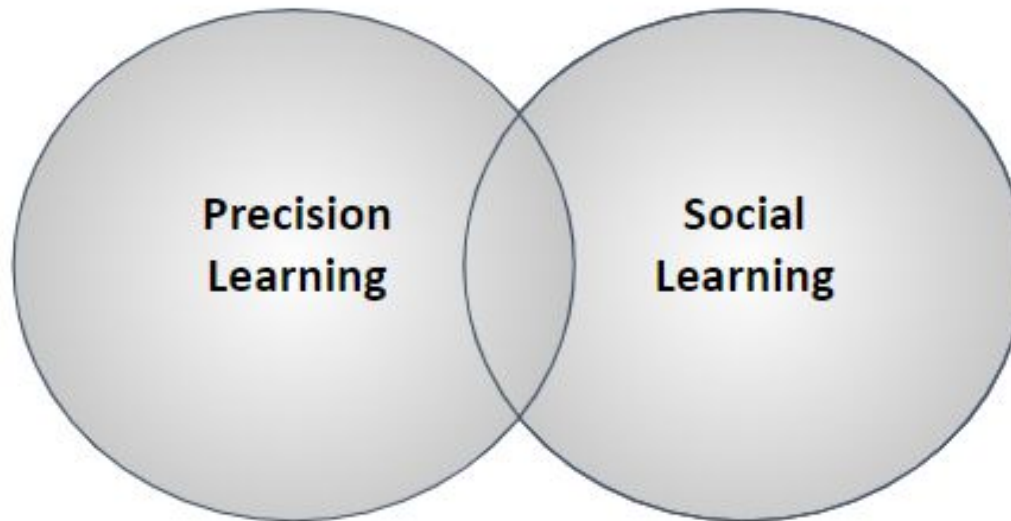
IEEE SA Open ILR Reference Models



Broward Equity Co-Lab

CLR Data creation and exchange use cases

The **Broward Equity Co-Lab** brings together the intersection of two big ideas in a large, diverse environment bringing together research, practitioners, and platforms to support scalable blended solutions to Algebra mastery.



- **Precision Learning** is the set of approaches that encodes learning as measurable discrete skills that can be plotted against a pathway to determine position and proximal learning zone.
- **Social Learning** is the set of approaches that understands the learner as a social being in context with culture and relationships that create motivation and curiosity.

Broward Equity Co-Lab

CLR Data creation and exchange use cases

Broward County Public Schools (BCPS) is the 6th largest school district in the US.

1. Approximately half of BCPS graduates enroll in Broward College. Of these students, less than half pass math and ELA Accuplacer tests to be placed in all courses that build credit to a degree. Nationally, only 7% of such students ever graduate.
2. Computer science education is now learned in multiple settings, in class, after school, summers, and through informal study. There is no good way of tracking student competency from these multiple sources to create a resume of skills to share with future education programs and or prospective employers.
3. Elite athletes and other students who pursue alternative learning paths often struggle to demonstrate academic qualifications.

New competency-based, blended learning approaches have demonstrated success in both remediation and acceleration. Open technical standards enable these new learning models to exist at the scale of the Internet across systems while preserving private data access control. The **IMS Global Comprehensive Learner Record (CLR)** draft candidate specification provides a blueprint for implementing this approach at the scale of the Internet. This project, as part of the **OpenCLR Lab**, will explore the intersection of key technical and policy issues to create a national demonstration model.

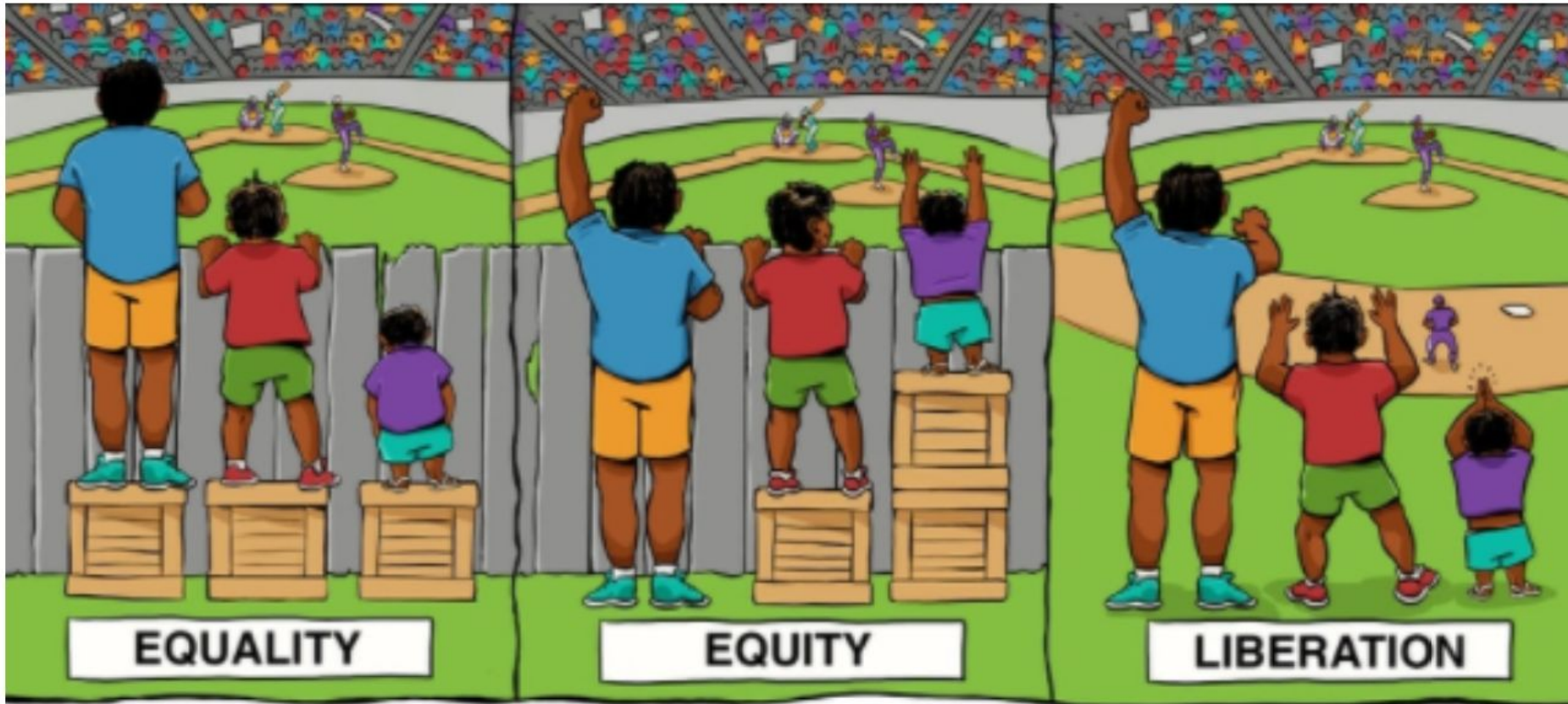
Broward Equity Co-Lab

CLR Data creation and exchange use cases

[illegible]

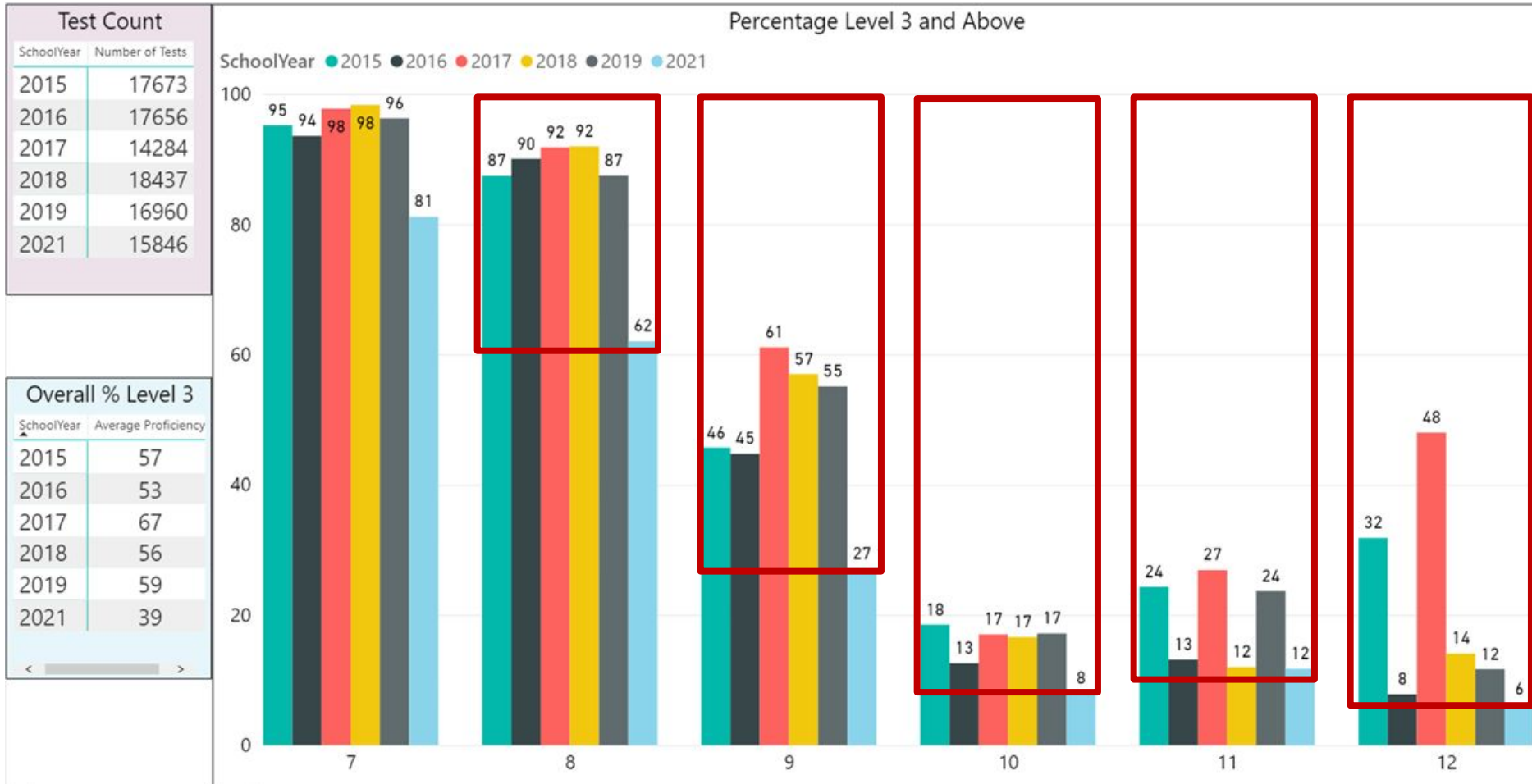
Broward Equity Co-Lab

CLR Data creation and exchange use cases

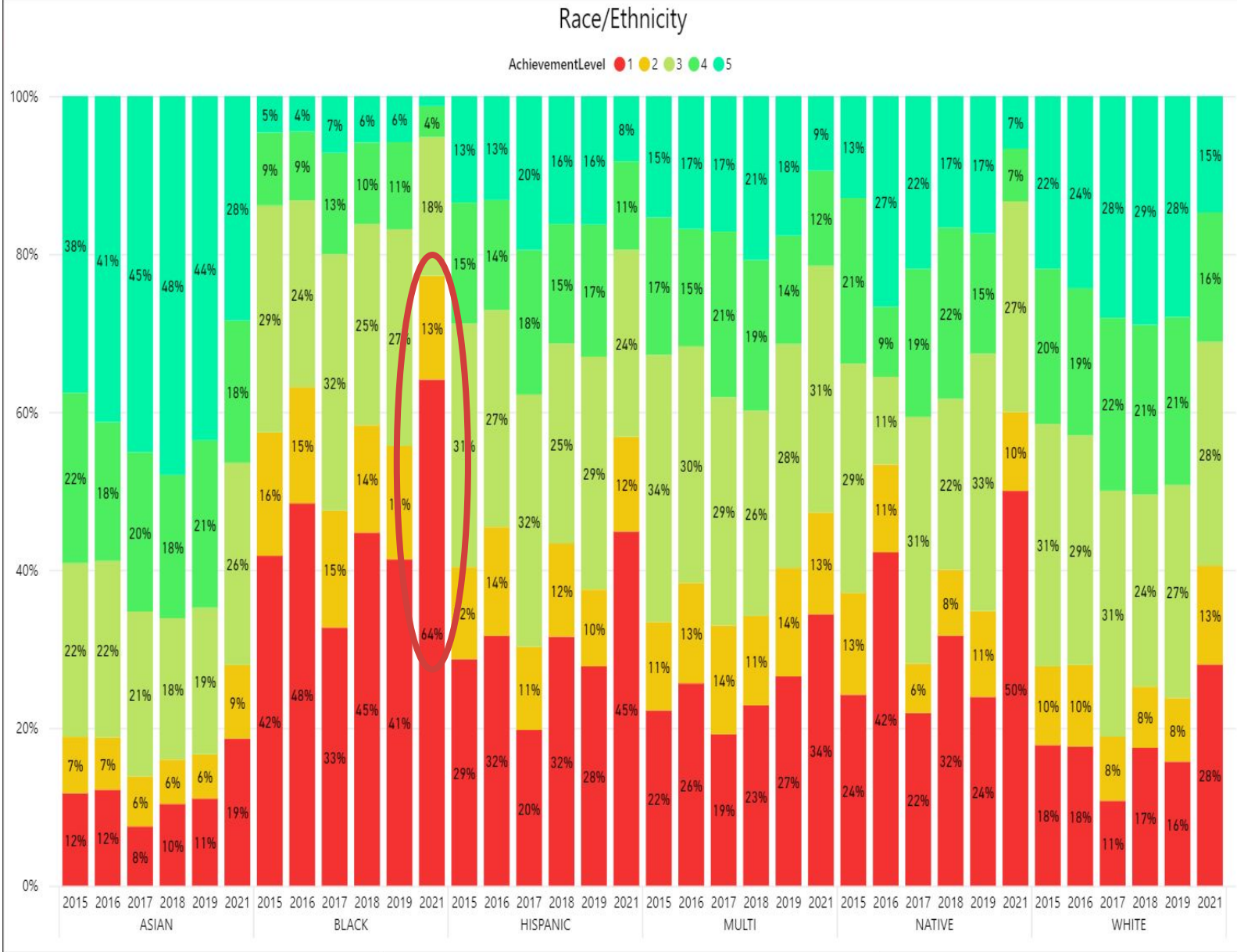


Algebra Proficiency by Grade Attempted

Students enrolled in Algebra in G6-8 pass at 95%+, G9 at ~50%, and G10 and later below 20%



FSA-EOC Algebra 1 Percent Level 3 and Above by Race/Ethnicity



Broward Equity Co-Lab

CLR Data creation and exchange use cases

One Writing Sample, Two Student Races (Figure 1)

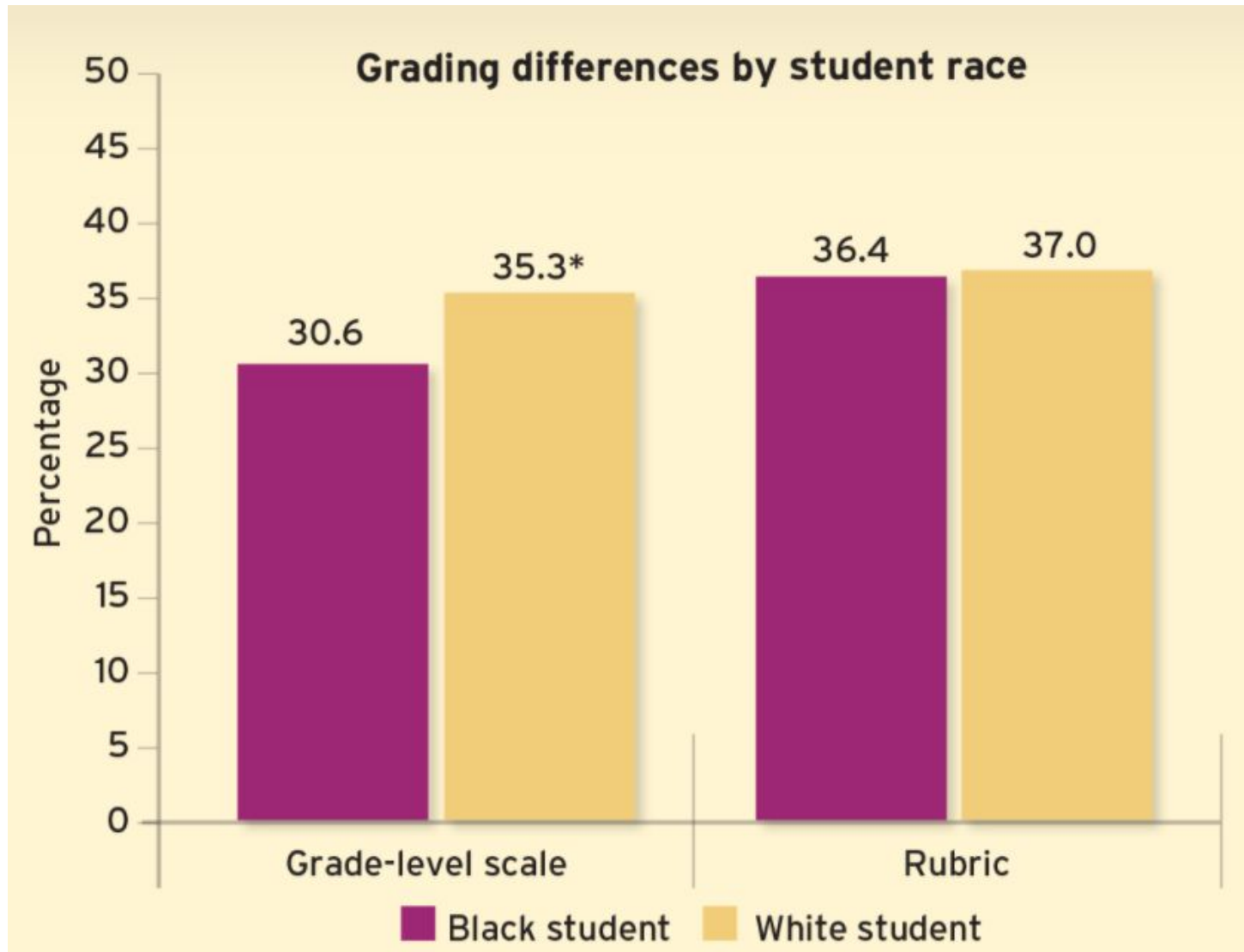
In an experiment, teachers were asked to assess one of the two writing samples below, which were presented as the work of a second-grade boy asked to write about his weekend. The work is identical except for the names mentioned—either “Dashawn,” suggesting it was written by a Black student, or “Connor,” suggesting it was written by a white student.

I WOSE WITH MY
BROTHER CONNOR and
HIS FRIND
BUT IT SCOT WOSE
a GRAET DAY TO BE
a BOY AT HOME

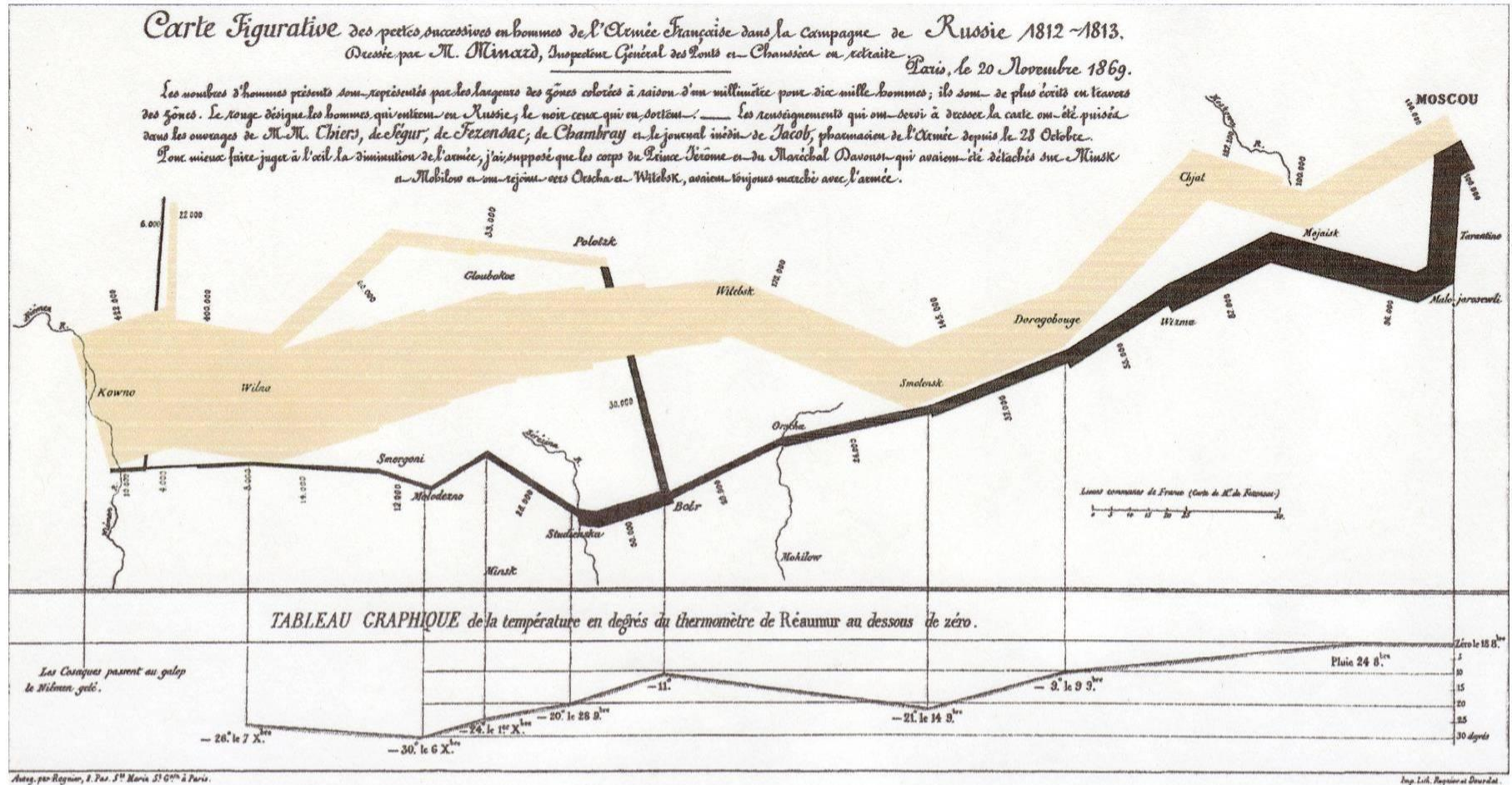
I WOSE WITH MY
BROTHER DASHAWN and
HIS FRIND
BUT IT ARIN WOSE
a GRAET DAY TO BE
a BOY AT HOME

Broward Equity Co-Lab

CLR Data creation and exchange use cases

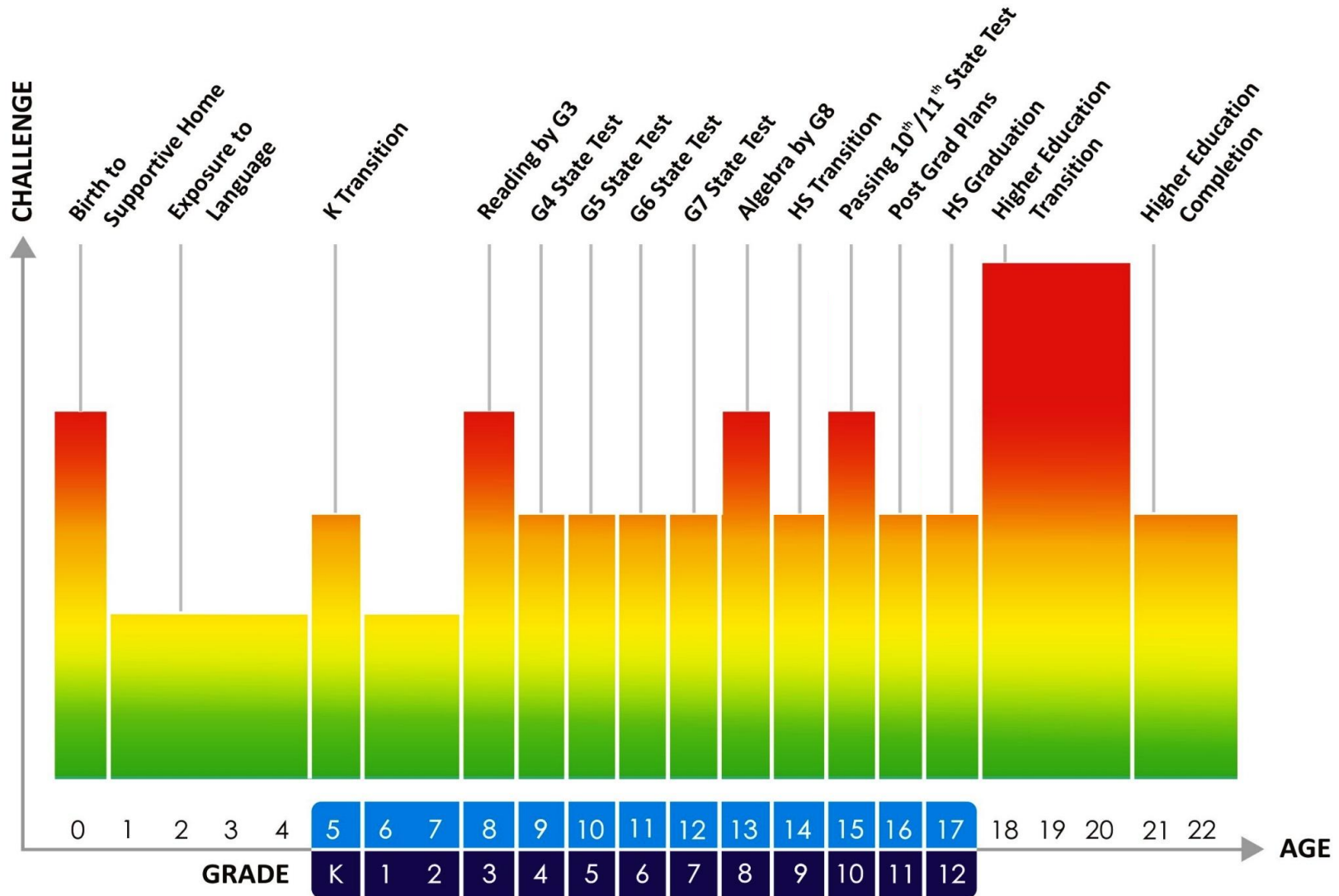


Napoleon's Long Campaign (Tufte)



The long campaign from poverty to post-secondary graduation.

The greater the challenge, the more targeted support needed.



FSA Algebra 1 EOC Percent Level 3 and Above

7 th Grade	
Test Count	
SchoolYear	Number of Tests
2015	1725
2016	1812
2017	1514
2018	1732
2019	1871
2021	2056

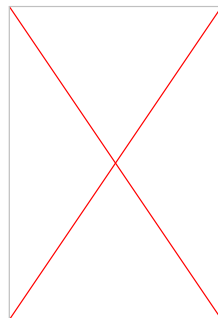
8 th Grade	
Test Count	
SchoolYear	Number of Tests
2015	3767
2016	3335
2017	3584
2018	4133
2019	4295
2021	3900

9 th Grade	
Test Count	
SchoolYear	Number of Tests
2015	10652
2016	9426
2017	7234
2018	6729
2019	6782
2021	7105

10 th Grade	
Test Count	
SchoolYear	Number of Tests
2015	1433
2016	2466
2017	1834
2018	4395
2019	3804
2021	2524

11 th Grade	
Test Count	
SchoolYear	Number of Tests
2015	74
2016	540
2017	93
2018	1128
2019	148
2021	213

12 th Grade	
Test Count	
SchoolYear	Number of Tests
2015	22
2016	77
2017	25
2018	320
2019	60
2021	48



Overall % Level 3	
SchoolYear	Average Proficiency
2015	87
2016	90
2017	92
2018	92
2019	87
2021	62

Overall % Level 3	
SchoolYear	Average Proficiency
2015	46
2016	45
2017	61
2018	57
2019	55
2021	27

Overall % Level 3	
SchoolYear	Average Proficiency
2015	18
2016	13
2017	17
2018	17
2019	17
2021	8

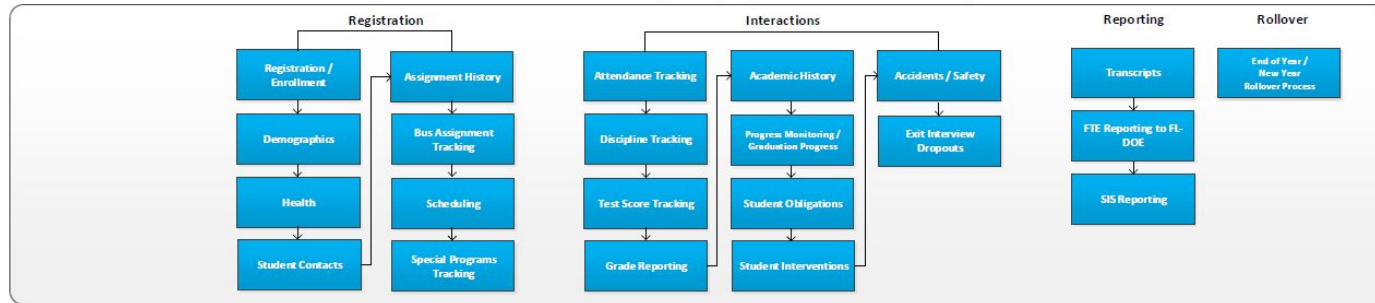
Overall % Level 3	
SchoolYear	Average Proficiency
2015	24
2016	13
2017	27
2018	12
2019	24
2021	12

Overall % Level 3	
SchoolYear	Average Proficiency
2015	32
2016	8
2017	48
2018	14
2019	12
2021	6

BCPS Student Information System (SIS) – Current TERMS Conceptual Architecture

4/24/18

Core SIS
Functionality
(TERMS)

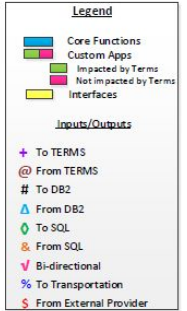
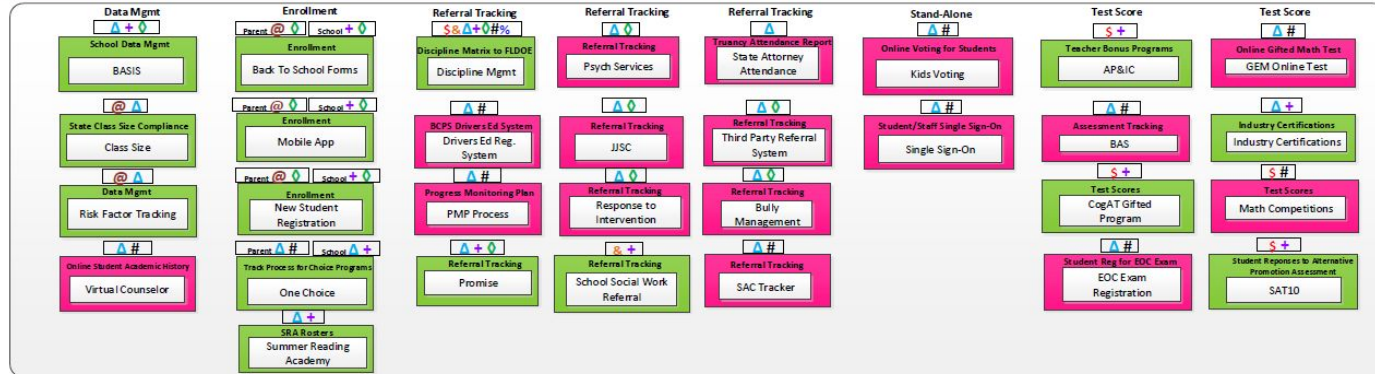


Extract Transform & Load (ETL)

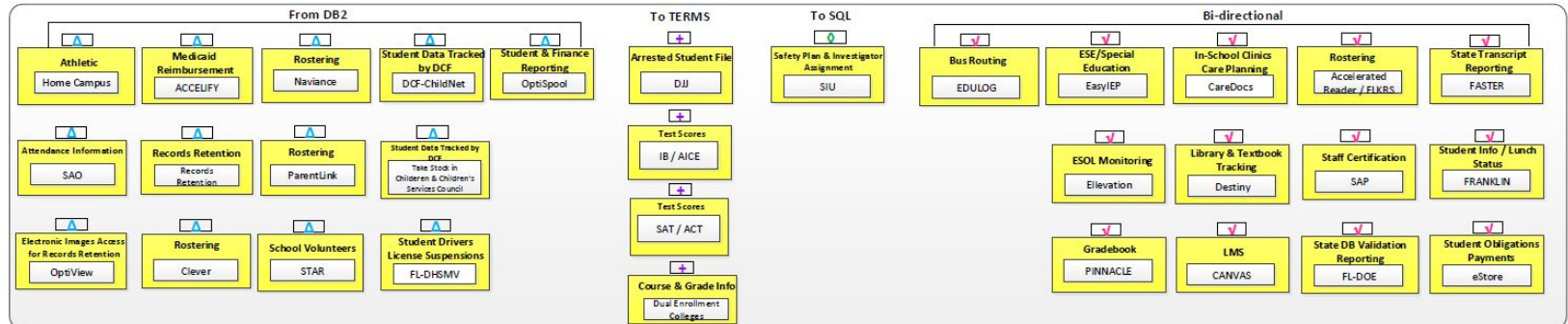
DB2 (DWH)

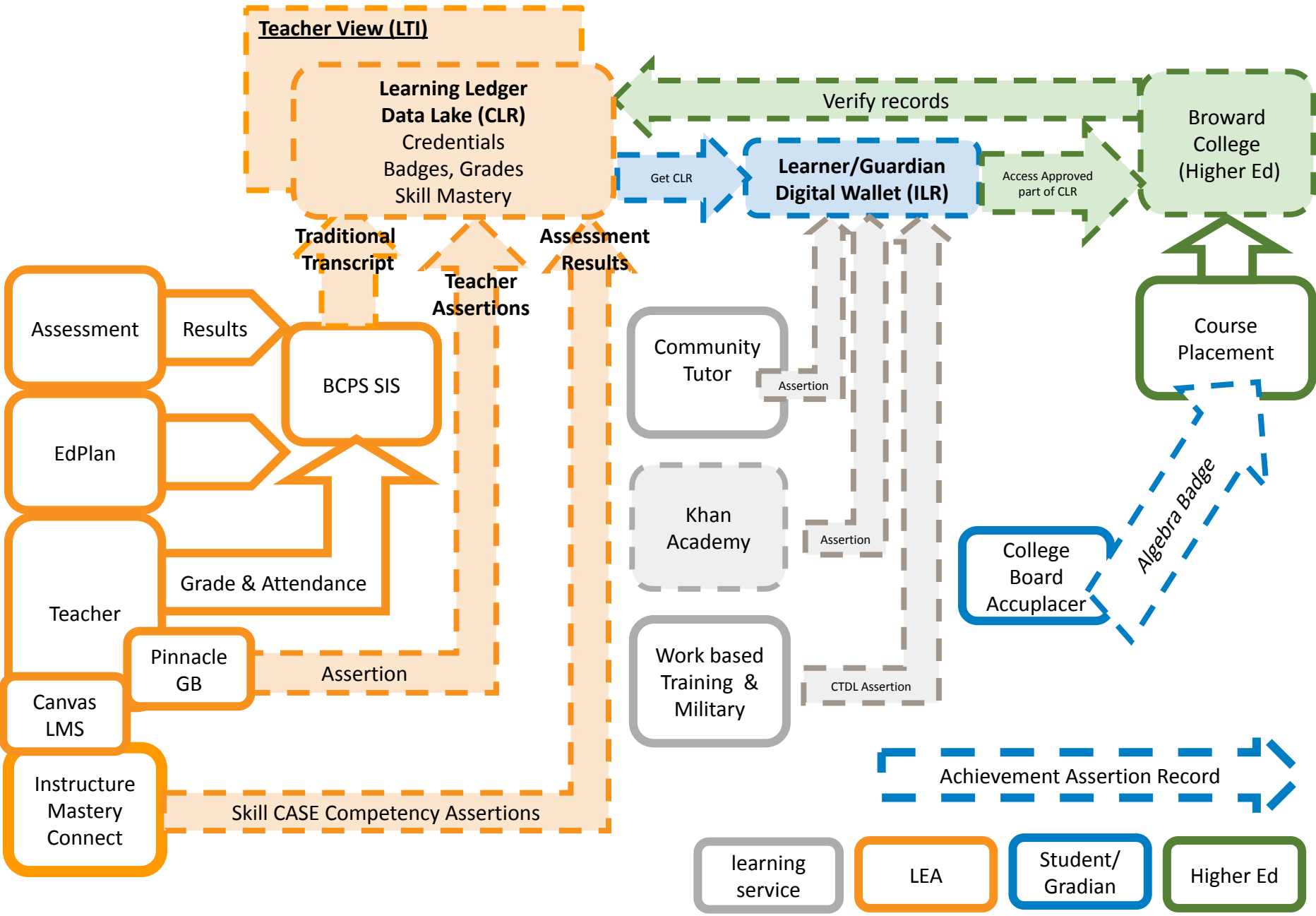
SQL

Custom
Applications



Key BCPS
Interfaces/3rd
Party Vendors
Whom Data is
Shared





TECC SEPA

LTI Window to PII with Differentiated Security

Account

Dashboard

Calendar

Info

History

Comments

Help

Assignments

Pages

Quizzes

Files

Discussions

Conferences

Syllabus

Outcomes

Rubrics

Collaborations

Settings

Due	For	Available from	Unit
	Everyone		

Unit 1

You've already used students with this rubric. Any major changes could affect their assessment results.

Criteria	Ratings				Pts
1.8 Communicate information and ideas effectively (maximum 10 pts)	4 pts Exceeds Expectations	3 pts Meets Expectations	2 pts Approaching Expectations	1 pts Early Progress	4 pts
4.G.1 Properly identify and construct parallel and perpendicular lines (maximum 10 pts)	4 pts Exceeds Expectations	3 pts Meets Expectations	2 pts Approaching Expectations	1 pts Early Progress	4 pts
6.8 Select and use applications effectively and productively (maximum 10 pts)	4 pts Exceeds Expectations	3 pts Meets Expectations	2 pts Approaching Expectations	1 pts Early Progress	4 pts
1.B.1 Demonstrate ability to work independently (maximum 10 pts)	4 pts Exceeds Expectations	3 pts Meets Expectations	2 pts Approaching Expectations	1 pts Early Progress	4 pts

Total Points: 16

Differentiators

3/14

Choose groups

☒ Academic Interventions

☒ Additional Accommodations

☒ Flexible Presentation

☒ Flexible Responding

☒ Flexible Scheduling/Testing

☒ Flexible Setting

☒ Monitoring/Plans

☒ Other

☐ AM test time for test
0 of 1 student selected

☐ AT device (identified through assessment) for responding
0 of 4 students selected

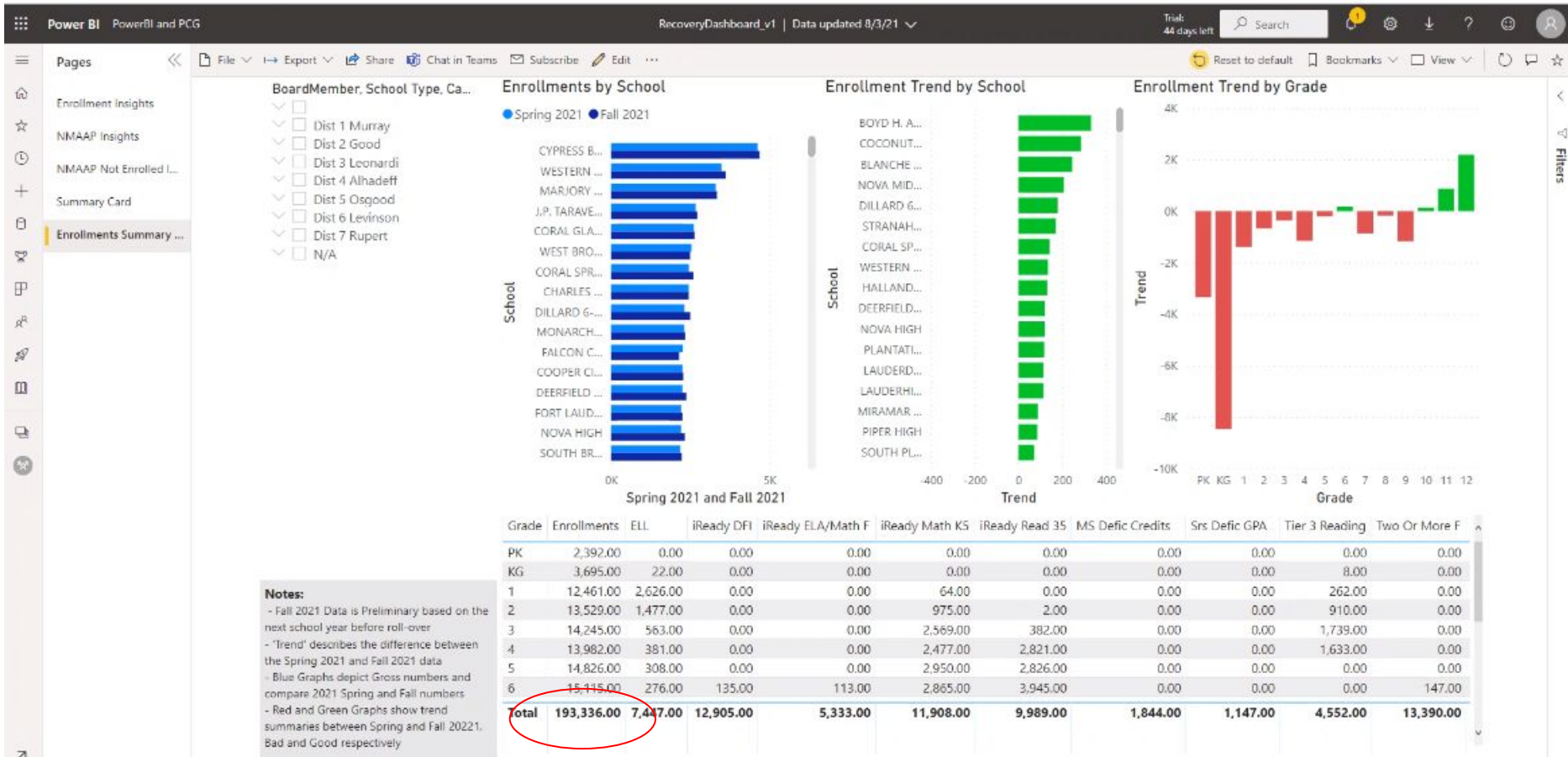
☐ Achieve 3000
0 of 3 students selected

☐ Add'l time for testing (Total time= time and a half / twice / more than twice the allotted time)
0 of 1 student selected

☐ Additional Accommodations
0 of 14 students selected

Equity in Recovery

Student re-engagement campaign



Achievement Assertions

A common conceptual model for IMS CLR, IEEE ILR, and W3C Edu

WEBCON < TutorEd Main Search everywhere...

During the Session, how would you describe the student's behavior? Please take into account any specific accommodations the student may need. Scale is 1: Unacceptable Behavior, 2: Some Unproductive Behavior, 3: Adequate Behavior for Progress, 4: Well Behaved 5: Well Behaved+

Unacceptable behavior ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 Well Behaved+

Standards / Skills *

Standard / Skill Reviewed*	Description	Comprehension Eval*	Session Comments (*)
LAFS.1.L.1.1.a X	Print all upper- and lowercase letters.	Emerging + X	The Student is having difficulty identifying when or where not to use upper-case

Comprehension Eval X

ID	Name	Description
+ 0	N/A	Not Applicable
+ 1	Limited Evidence	Student's understanding is incomplete, and inconsistencies are evident. Student is able to make guesses when questions are directed, but responses do not make sense. Instructor guidance is required almost 100% of the time.
+ 2	Emerging	Student demonstrates some understanding of the standard and is able to recall a few aspects, such as selecting the correct answer in a multiple-choice question instead of summarizing or explaining with accuracy. Complete understanding and application of the standard has not been achieved.
+ 3	Emerging +	Student demonstrates almost complete understanding of standard but still has some misconceptions. Student is able to apply knowledge of the standard successfully but lacks consistency.
+ 4	At Standard	Student understanding of standard is evident. Student is able to explain and justify thinking consistently.
+ 5	Above Standard	Student comprehension of the standard is superior. Student is able to make connections across standards and apply knowledge in complex ways.

OK Close

Achievement Assertions

A common conceptual model for IMS CLR, IEEE ILR, and W3C Edu

Learner Record Set	
Learner Record	
Assertion	Achievement
Learner (PII)	> CASE/RSD/ESCO Skill
Issuer	> CTDL Credential
Evidence/Time	> OB BadgeClass
Verification	Achievement Level
Verification	

I,	assert that	demonstrated	at	with
Issuer	Learner	Achievement	Level	Evidence

1. a **level** described in a **rubric**.
2. **Achievement (Description)**. An achievement can be described as a shared record that can be set as a goal and/or accomplished by more than one learner and, therefore, be compared and exchanged. **Rubrics** can be used to define levels associated with the achievement definition (e.g. “approaches,” “meets,” “exceeds”).
3. **Assertion/claim**. The attestation made by an Issuer about a Learner regarding an Achievement. The Assertion may also include associated evidence, results, or other metadata regarding a specific Achievement.
4. **Evidence**. Information supporting the issuance of an assertion such as URL to an artifact produced by the Learner. Evidence can be curated into **portfolios** and used to generate **assertions**.
5. **Learner Record Sets**. Sets of achievement assertions can be grouped into immutable **transcripts** and/or can be curated into learner record sets.
6. **Context**. Learner records exist as linked data related to other learner records and sets and aligned with other relevant objects like CASE and CTDL.

Florida Math Pathway - Update (Jon Haber)



Signed in as jonathan@degreeoffreedom.org

Florida Math Pathway

Tree ViewAssociation ViewLog View

Draft

Browse, edit, reorder, and create new items here.

Change Document

☐ Enable drag-and-drop reordering

☐ Search...

Florida Math Pathway

- Grade 7
- Grade 8 (Pre-Algebra)
 - 8.RN Real Numbers**
 - 8.RN1** Student can explain the difference between rational and irration...
 - 8.RN2 Student can explain that the real numbers include both rational ...
 - 8.RN3 Student can explain that rational numbers can be expressed in d...
 - 8.RN4 Student can express a rational number in any format as a decimal.
 - 8.RN5 Student can explain that a decimal expansion of a rational numb...
 - 8.RN6 Student can convert a decimal expansion into a different form of...
 - 8.RN7 Student can determine square roots of numbers.
 - 8.RN8 Student can estimate rational and irrational numbers and plot th...
 - 8.RN9 Student can order and compare rational and irrational numbers.

Item DetailsCopy ItemsCreate Associations

**8.RN1** Student can explain the difference between rational and irrational numbers.

Full Statement:
Student can explain the difference between rational and irrational numbers.

Identifier: cdf83fa0-1312-11ec-a01c-0242ac140003

Education Level: 08

Type: Objective

Notes:
<https://www.khanacademy.org/e/identifying-whole--integer--and-rational-numbers>

More Info

EditDeleteMake This Item a ParentAdd an Exemplar

About OpenSALT™

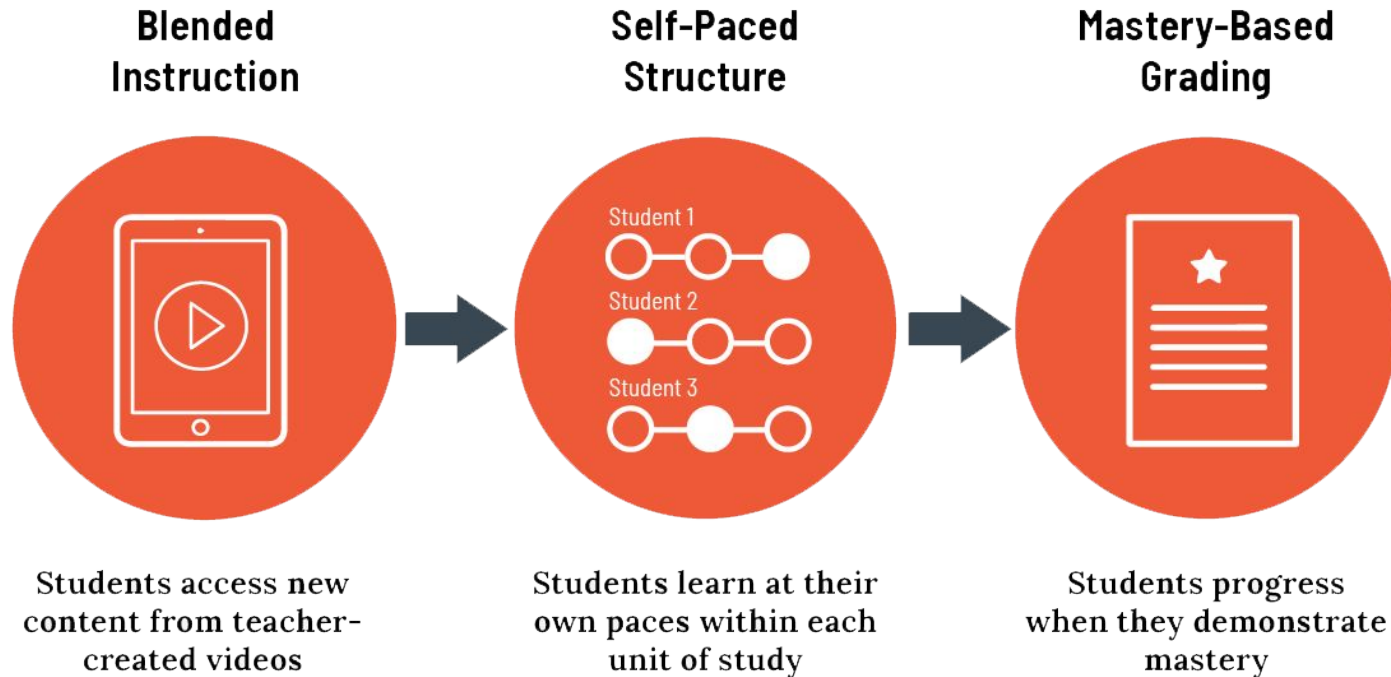
Achievement Assertions

A common conceptual model for IMS CLR, IEEE ILR, and W3C Edu

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+ 5	Above Standard	Student comprehension of the standard is superior. Student is able to make connections across standards and apply knowledge in complex ways.

Mastery Learning

Shifting classroom instruction to mastery learning



In traditional classrooms, student often struggle to master material because we operate on a “one size fits all” framework: one instructor teaches all students the same lesson on the same day, regardless of students’ prerequisite skills, attendance patterns, unique academic needs, or social-emotional experiences.

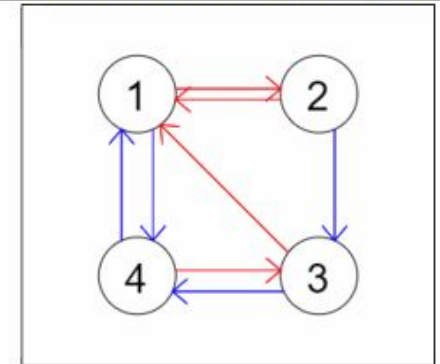
In a mastery classroom, teachers create instructional videos so students can move at their own pace and be graded on mastery. This use of technology allows the teacher to work with students one-on-one or in small groups. Different students will be working on different lessons on any given day, collaborating with students who are also working at their pace, or seeking help from students who are ahead. All students revise their work until they show true understanding of the material, and then advance to the next lesson.

Broward Algebra Project Pedagogy

Games, Relationships, Culture - Collaborative Learning



The Road Coloring Program



Select A Road Color?

Red Road Blue Road Undo

Set Road Sequence Reset

Show Ordered Pairs



The Multi-Step Process helps students make the necessary jump from event to abstract thinking.

Algebra
Time left: 00 days, 00 hours, 37 minutes, 32 seconds

Start 1 2 3 4 5 6 End

1) A city contains three buildings. There is one blue road and one red road leaving from each building in this city. The following arrow diagrams represent these roads.

Blue Roads

Leave From	Go To
1	2
2	3
3	1

Red Roads

Leave From	Go To
1	3
2	1
3	2

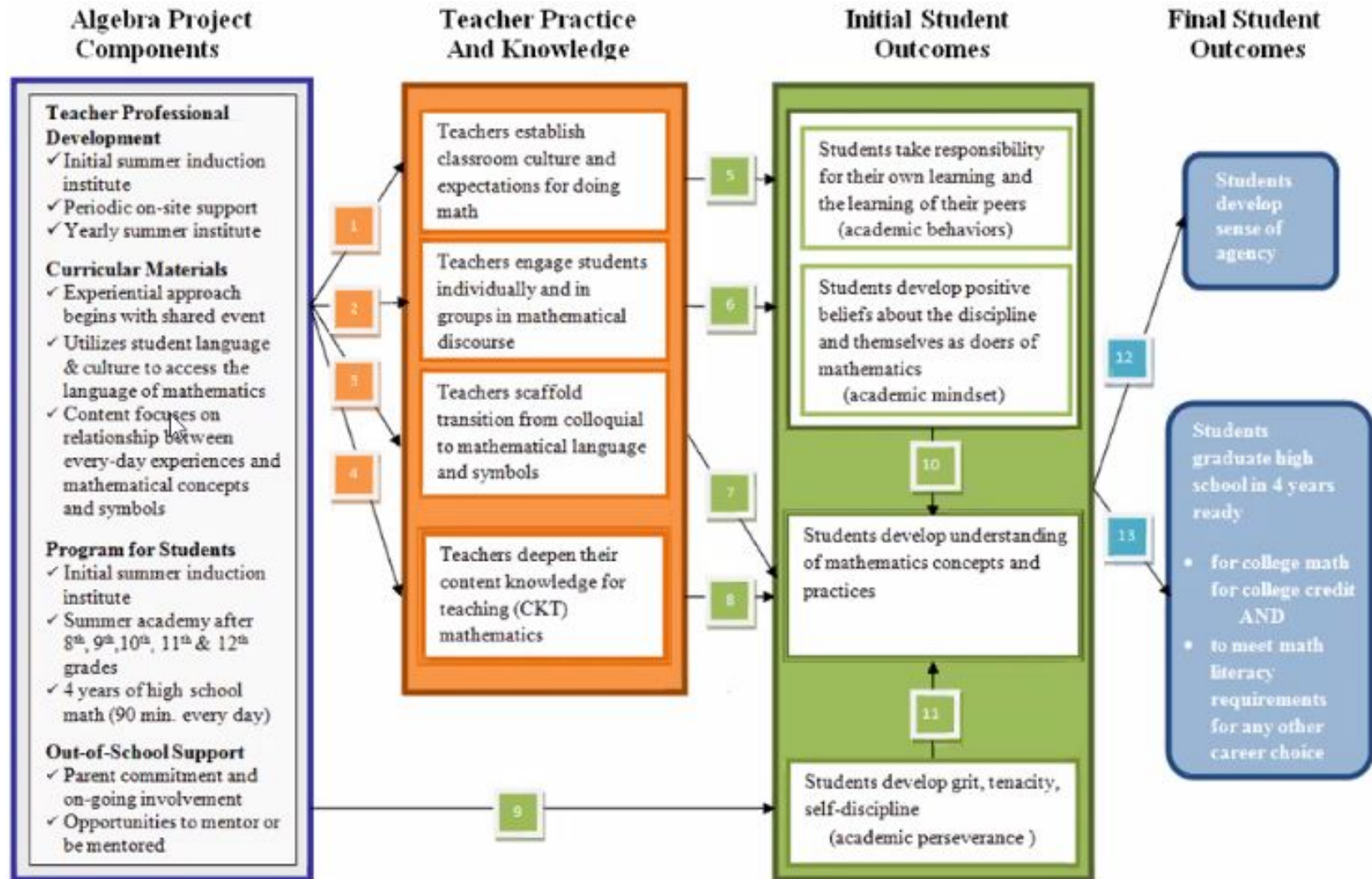
1. Use the directed graph tool to create a directed graph that models the roads in this city.

Click "Draw Arrow" button to start.

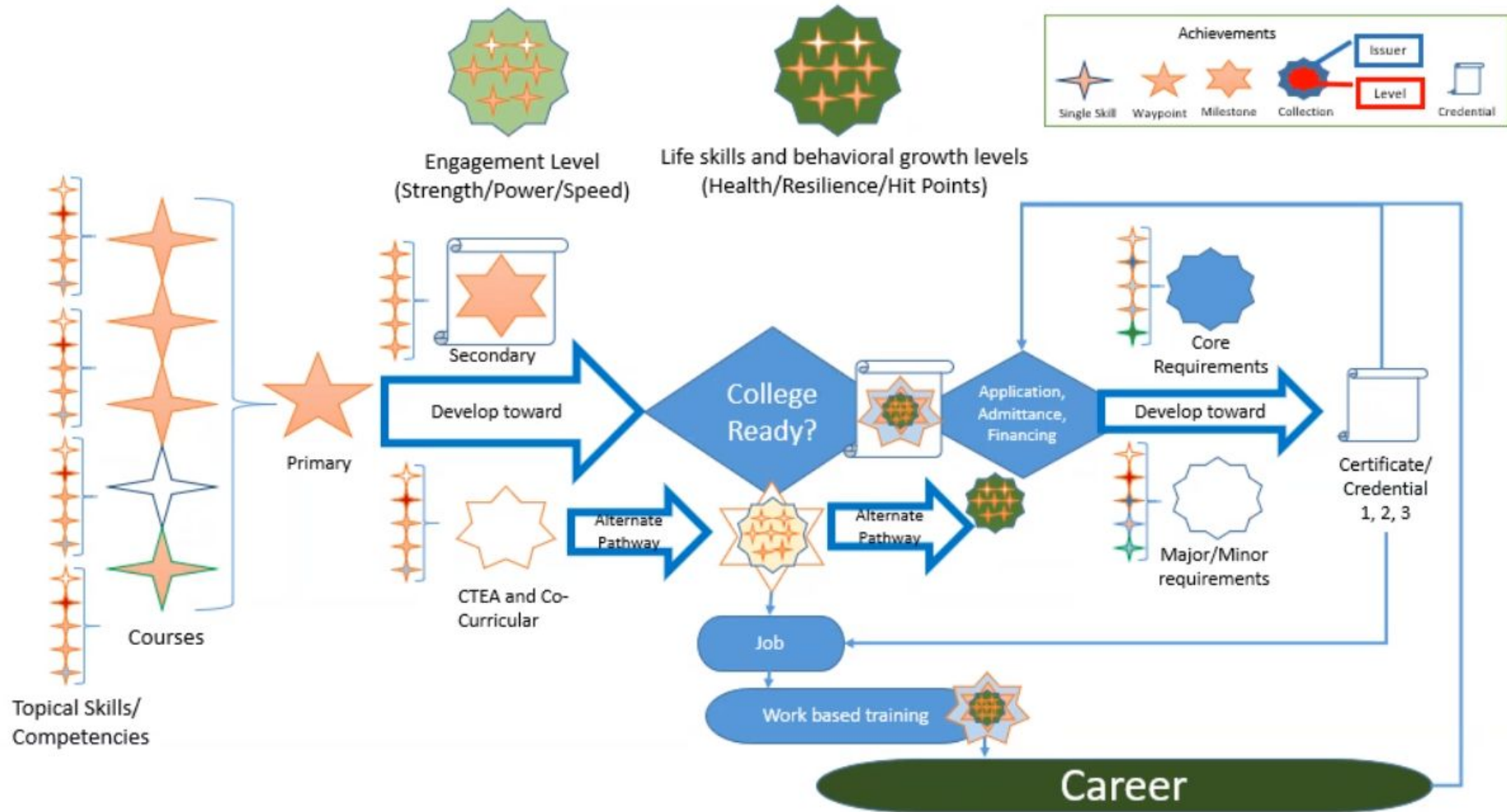
Draw Blue Arrow Draw Red Arrow

Delete Arrow Start Over

Broward Algebra Project Theory of Action

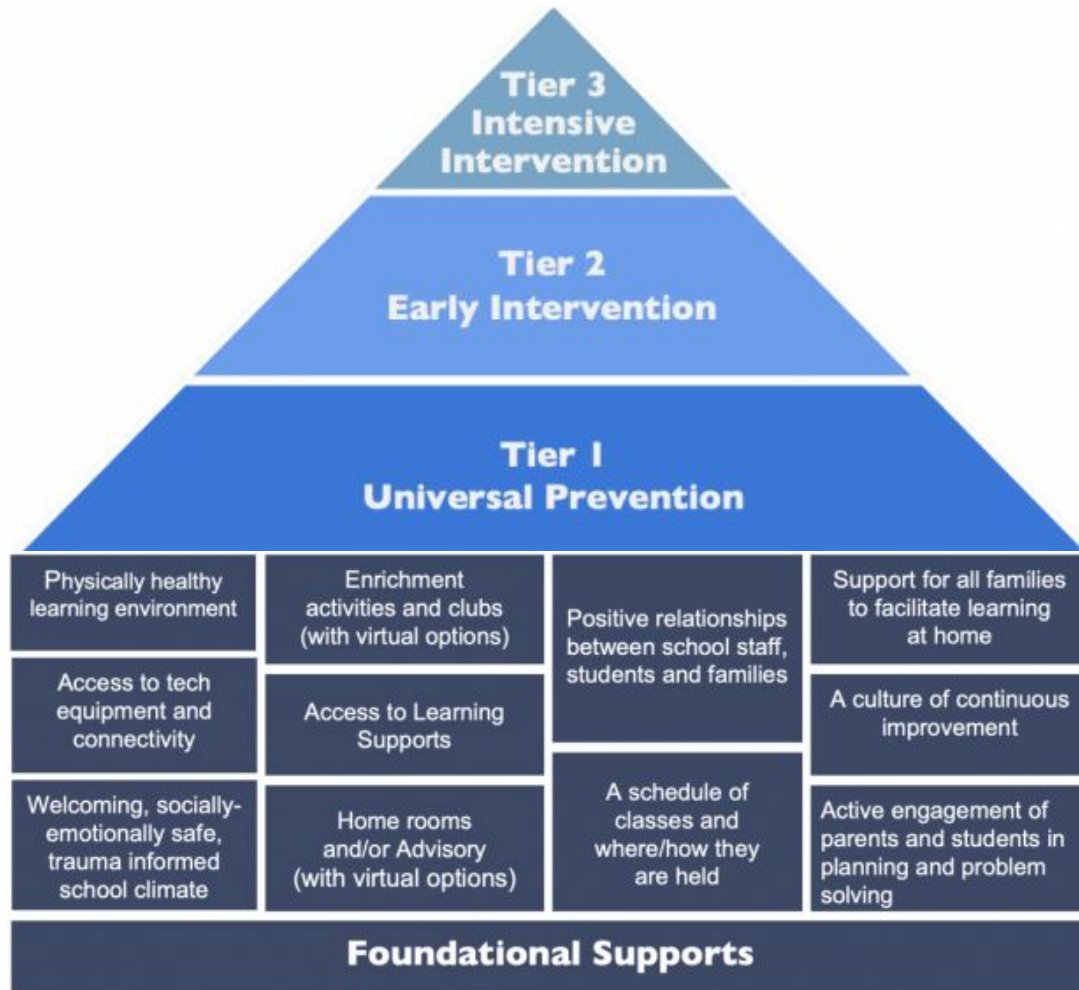


Broward Design



Building a Foundation for Tiered Support

Safe learning spaces, remote access and devices, web of support



Equity in Recovery

Student re-engagement campaign



Mask Mandates

Learning Loss

COVID Testing

Contract Tracing

COVID Protocols

EDPlan Platform

TutorEd Services

Data Interoperability Services

Ed Recovery Dashboard

Project/Program Management

Behavior and Health Services

Student + Family Engagement

Custom Math + ELA Curriculum

Professional Learning

Equity Services

Solutions that empower districts to meet the diverse needs of students. Solutions that matter.

Public Consulting Group (PCG) works with districts across the country to bolster educational recovery efforts following the COVID-19 pandemic. Depicted below are some of the ways PCG helps educators to position all students for success in the 2021-2022 school year and beyond.



To learn more about PCG's efforts to support equitable educational recovery, inclusive of all students, contact **Naomi Szekeres** at NSzekeres@pcgus.com.



Building capacity of educators and leaders to engage diverse learners and deliver educational excellence.

Principal's Playbook

Courageous Conversations about Race

Equity Playbook

Meeting basic health and safety needs to ensure all students have a stable foundation for learning and growth.

PCG's Behavioral Threat Assessment (BTA) and Suicide Risk Assessment (SRA) Solutions

Identify and support students who may be a danger to themselves or others and mitigate risks through intervention processes.



EDPlan Health™

Provides school nurses with convenient, secure access to basic student health information and the ability to digitally document the provision of health services to students.



Providing efficient and effective specialized services to ensure all students have access to a quality education.

EDPlan™

Comprehensive, web-based case management platform for students with exceptional needs.



Student Education Plans and Accommodations (SEPA)

Technology interoperability that integrates student instructional data directly into a district's learning management system (e.g., Canvas) enabling educators to ensure lesson plans meet students' specific accommodation needs.



Combining technology and tutoring for personalized instruction to better support and showcase students' learning journeys.

Comprehensive Learner Records (CLRs)

Technology interoperability that enables district IT systems to interact with other platforms providing educators with specialized views of CLRs to inform personalized, competency-based learning and facilitate students' educational progress.



Accelerated Learning Services

Tutoring to help address students' academic and social-emotional learning (SEL) needs. PCG tutors also support student and family outreach to encourage re-engagement throughout the learning community.



Enabling meaningful engagement and educational recovery while bringing equity with excellence to education.

Ed Recovery Dashboard

Technology interoperability services that power an Ed Recovery Dashboard at the district, cadre, and school levels, to enable more personalized learning, support intensive tutoring, reduce chronic absences, and ensure academic progress.

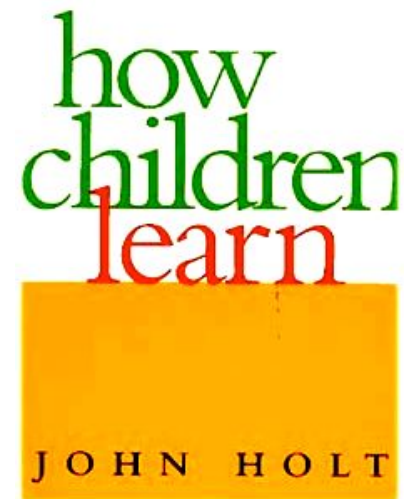


And so much more!

PCG offers a broad range of solutions designed to improve educational outcomes, meet the needs of diverse learners, advance equity and educational excellence, and position students (and educators!) for success.

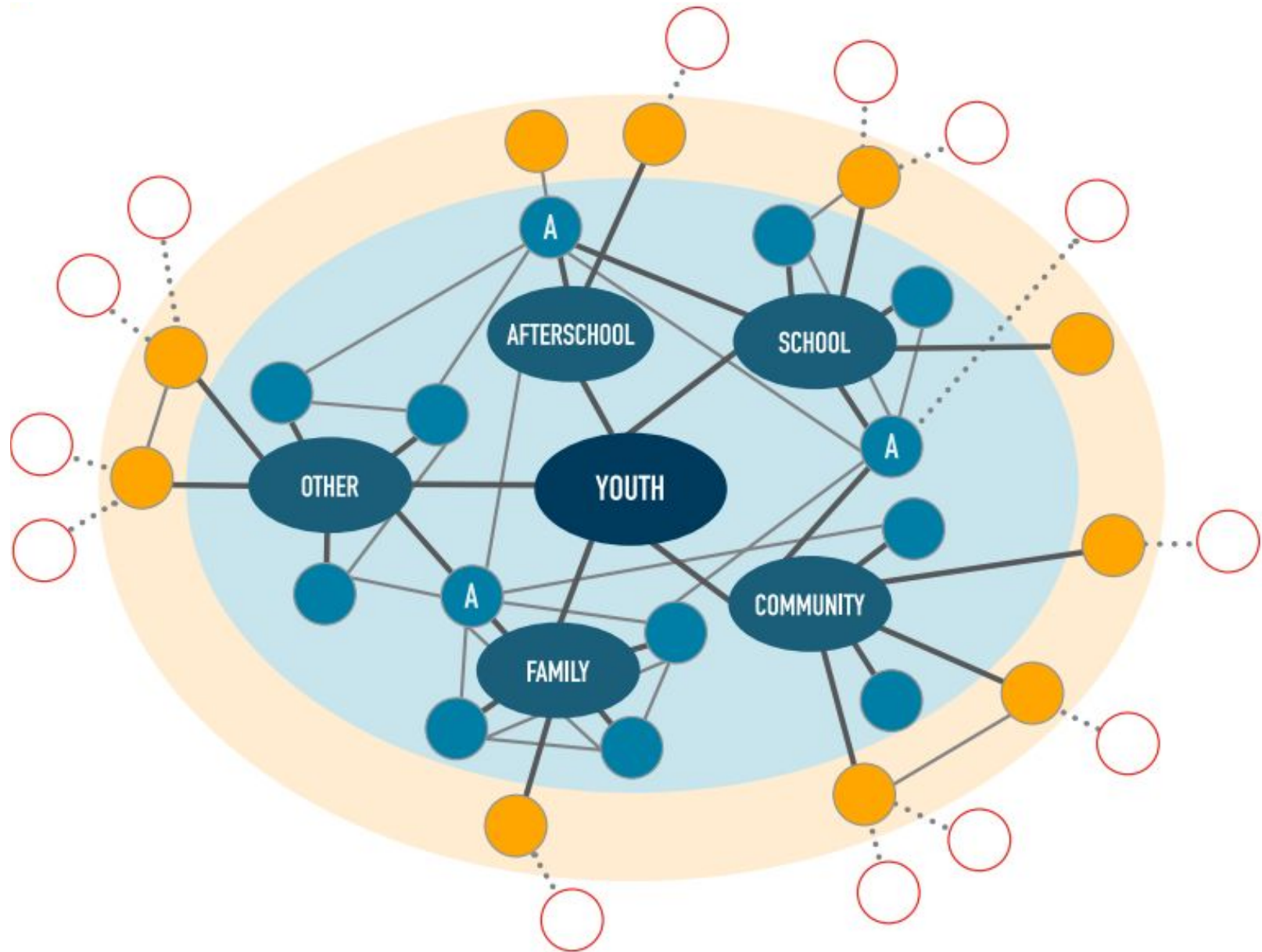


“It is only in the presence of loving, respectful, trusting adults [...] that children will learn all they are capable of learning [...] The tinkerers, dissectors, and manipulators will only drive children into artificial behavior, if not actual deception, evasion, and retreat.”



Relationship Mapping

Web of Support



Tutoring as a Service

Multimodal delivery

A Blueprint for Scaling Tutoring Across Public Schools

Elementary School Students and High School Tutors

Cross-age tutoring can support student learning and provide meaningful peer relationships that are good for kids.

High school tutors would receive elective credit.



2:1 student-to-tutor ratio

Middle School Students and College Work-Study Tutors

College students can be effective tutors when they are supported and follow structured curricula.

College students would be paid through the Federal Work-Study program.



3:1 student-to-tutor ratio

High School Students and Adult Tutors

Full-time tutors from national service programs can deliver effective individualized instruction.

Tutors would earn a stipend through AmeriCorps.



4:1 student-to-tutor ratio

Special Education Students and Paraprofessionals

A greater level of skill and individualization is necessary to support students with substantial disabilities.

Paraprofessionals would be paid through school districts.



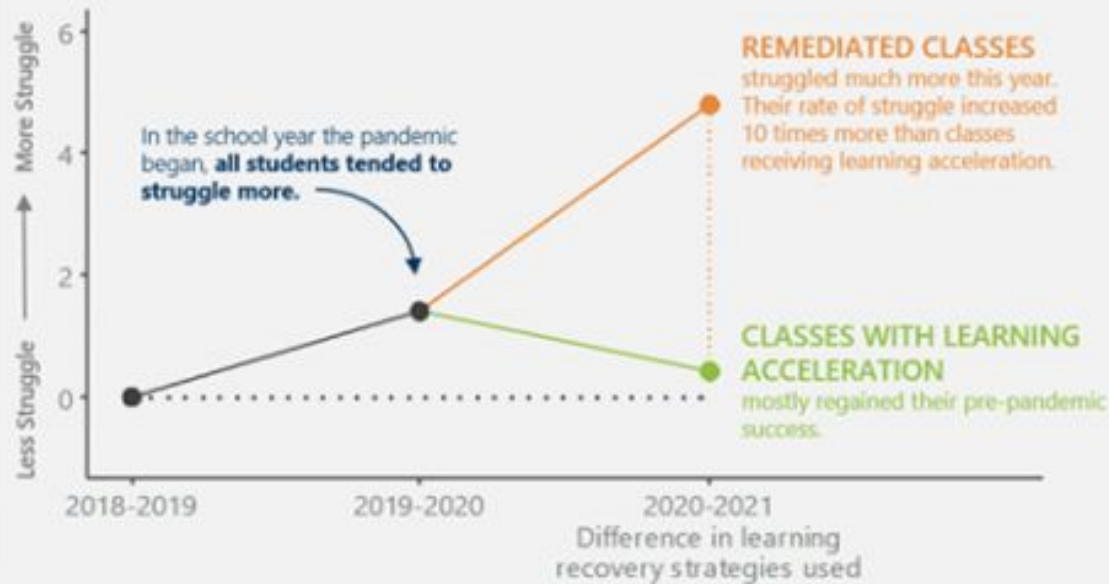
1:1 student-to-tutor ratio

Acceleration vs Remediation

Tech-enabled acceleration supports effectiveness of learning

Classes receiving learning acceleration struggled less this year...

Typical change since 2019 in total number repeated struggle alerts per grade-level lesson, in a class of 20 students



... And made it farther in this year's grade-level curriculum.

Classes receiving learning acceleration completed

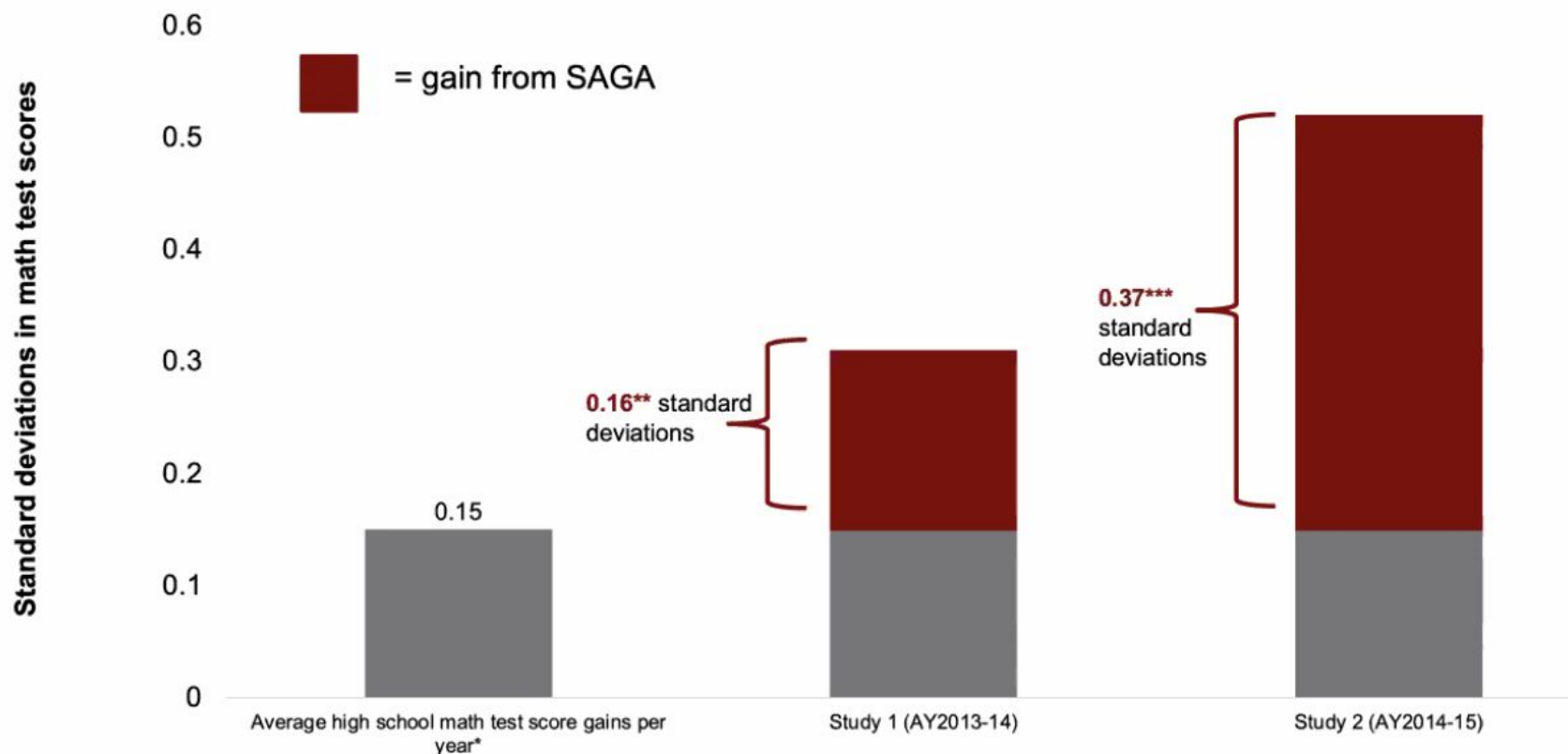
27%

more grade-level lessons than remediated classrooms.

SOURCE: N = 27,926 students / 3,742 classrooms for the remediated group. N = 22,713 students / 2,337 classrooms for the learning acceleration group. Zearn data drawn from 3rd, 4th, and 5th grade classrooms in school grades that missed the final set of lessons of previous school year with sufficient student activity and 3+ years of continuous data.

Chicago Research Design - SAGA

Students gained an extra 1 to 2.5 years of *extra* math learning in one year



**Reardon (2011) estimates that the average high school student gains between 0.6 and 0.7 standard deviations (SD) in math test scores from 8th to 12th grade, or approximately 0.15-0.175 SD per year.*

Broward Research Design

P

PROBLEM

I

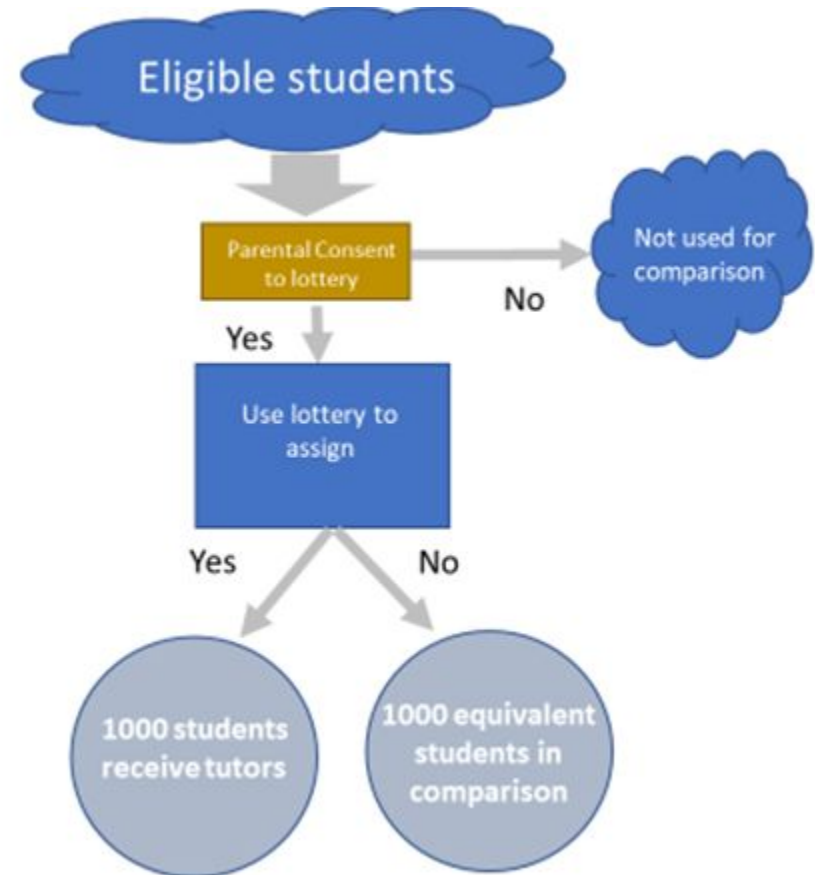
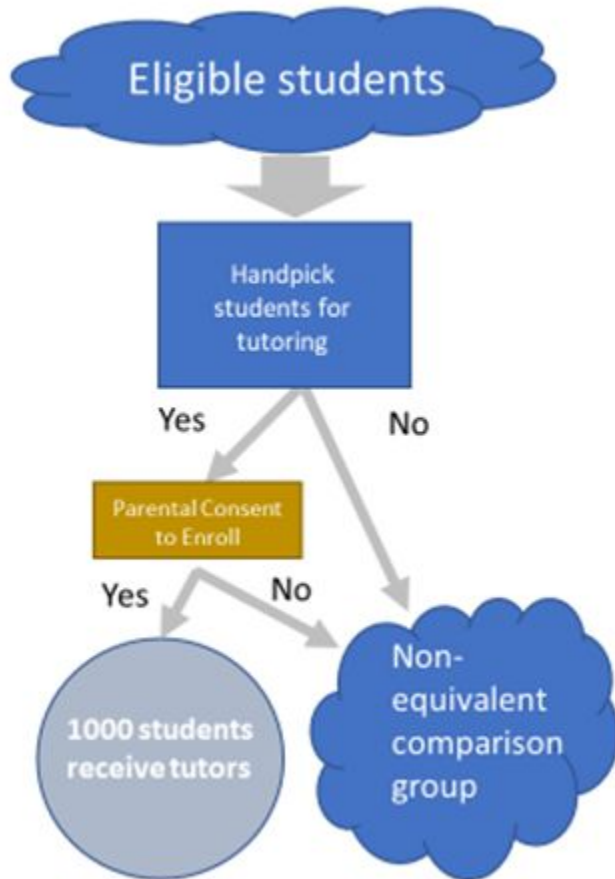
INTERVENTION

C

COMPARISON

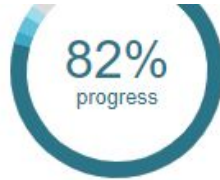
O

OUTCOME



Kahn Skill Report

Competency Assertions or Credential Assertion?



- 3 skills level two
- 4 skills level one
- 3 skills practiced
- 23 skills not started (struggling in 1)

Activity from: All time

☐ Only show attempted skills

▶ MISSION FOUNDATIONS	+ 6	■
▶ ALGEBRA FOUNDATIONS	+ 7	■
▶ SOLVING EQUATIONS & INEQUALITIES	+ 9	■
▶ WORKING WITH UNITS	+ 3	■
▶ LINEAR EQUATIONS & GRAPHS	+ 10	■
▶ FORMS OF LINEAR EQUATIONS	+ 11	■
▶ SYSTEMS OF EQUATIONS	+ 7	■
▶ INEQUALITIES (SYSTEMS & GRAPHS)	+ 8	■
▶ FUNCTIONS	+ 17	■
▶ SEQUENCES	+ 10	■
▶ ABSOLUTE VALUE & PIECEWISE FUNCTIONS	+ 4	■
▼ EXPONENTS & RADICALS	1	■ + 6 ■

Skill	Level	Questions	🕒
Multiply & divide powers (integer exponents)	↑ ■ Mastered	25	25
Powers of products & quotients (integer exponents)	↑ ■ Level One	4	1
Properties of exponents challenge (integer exponents)	■ Struggling	10	3
Square roots	↑ ■ Mastered	2	<1
Roots of decimals & fractions	↑ ■ Mastered	4	11
Cube roots	↑ ■ Mastered	11	15

CLR Data

Competency Assertions or Credential Assertion

Arguments

achievement

Unit 1: Real Number and Scientific Notation

type*

CFRubricCriterionLevel

targetName*

Decode words with common prefixes and suffixes in a 2nd grade text (51)

targetUrl*

https://sandbox.casenetwork.imsglobal.org/ims/case/v1p0/CFRubrics/02f

targetCode

targetDescription

Quality: Beginning to Demonstrate, Score: 1

frameworkName

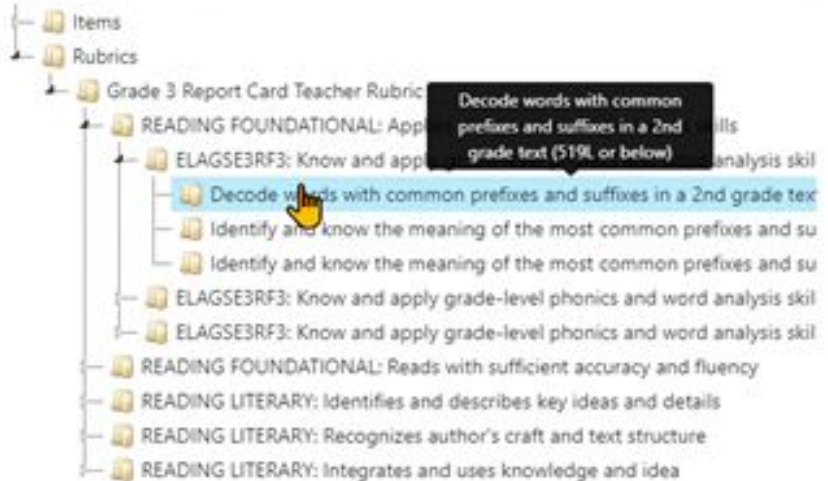
IMS CLR Demo Framework

Create

[Back to List](#)

CASE Framework

IMS CLR Demo Framework



Extended Transcript

Madison Williams

Email: mwilliams@example.org
Phone: 0000000000
Mobile: 0000000000
URL: http://example.org/mwilliams
Student ID: 123456789
Birth date: 1989-01-01
SourcedId: 0123456789



URL: http://example.org/cbu
Address: 123 E St NW, Washington, DC 20004
phone: 0000000000
Issuer Name: Kennedy Green
Issuer Title: CAO



Computer Science undergraduate degree - Bachelor of Computer Science
Completed: November 30, 2016 • With honors.



Other Properties

- *Date:* November 30, 2016
- *Level:* Bachelor of Science
- *Area of Study:* Computer Science



Introduction to Computer Science - [CS101]
Grade: A- • November 30, 2016



Other Properties

• *Result:* A

Extended Transcript

5/7/2020

eTranscripts | Student Transcript

Student Transcript - Unofficial - DEMO, Student3 1055577

Student Information

Name: DEMO, Student3
789 Demo St.
Bismarck ND, 58504
Birth Date: 1/22/1998
ND Student ID: 2134331300
ND HE Student ID: 1055577
Grade / Graduation Date: 12 - 6/5/2016
Civics Test Date:

GPA & Class Rank

Description	Value
Un-Weighted GPA	3.1887
Weighted GPA	3.2264
BPS Class Rank	190 of 389
Standard College Admission GPA	3.1887

School Information

Name: Bismarck High School
800 N 8th Street
Bismarck ND, 58501
701-323-4800
District: Bismarck Public School District
Enrollment Date: 8/27/2015
Exit Date/Reason: 1/16/2016 - Graduate
Certified By: Dale Snider
Date Certified: 1/17/2016

NDUS Core Course Credit Totals					High School Course Credit Totals					
ENGLA	Math	Sci	SocSt	NDUS Core GPA	9th	10th	11th	12th	Total Earned	Total Attempted
4.500	3.500	4.000	3.000	3.0333	8.000	7.500	7.000	4.000	26.500	26.500

Course Details

Subject Area	Course Name	Grade	Type	Credit	Semester 1	Semester 2	Summer 1	Summer 2
ENGLA								
Bismarck High School	English 12 - 05074	12	DC	1.000	B			B
Bismarck High School	English 11 - 05073	11		1.000			B	B
Bismarck High School	Speech (Dual Credit) - 05091	11	DC	0.500		B		
Bismarck High School	English 10 - 05072	10		1.000	B	B		
Wachter Middle School	English 9 - 05071	9		1.000			A	B
Math								
Bismarck High School	College Algebra (Dual Credit) - 11034	12	DC	0.500	C			
Bismarck High School	Algebra II - 11032	11		1.000	A	B		
Bismarck High School	Geometry - 11120	10		1.000	A	A		
Wachter Middle School	Algebra I - 11031	9		1.000	A	A		
Sci								
Bismarck High School	AP Physics 1 - 13586	11	AP	1.000	C	B		
Bismarck High School	Biology - 13020	10		1.000			B	C
Bismarck High School	Chemistry - 13031	10		1.000	C	B		
Wachter Middle School	Physical Science - 13030	9		1.000	B	B		
SocSt								
Bismarck High School	Economics - 15060	12	DC	0.500	B			
Bismarck High School	Government - 15111	12		0.500	C			
Bismarck High School	US History 1914 - 15085	11		0.500	C			
Bismarck High School	US History 1945 - 15085	11		0.500		C		
Wachter Middle School	Global Studies - 15020	9		1.000	A	A		
Other								
Bismarck High School	FACS - Foods Of World - 09136	12		0.500	C			
Wachter Middle School	FACS - Beginning Foods - 09131	9		0.500	A			
Wachter Middle School	FACS - Creative Sewing - 09027	9		0.500		A		
Bismarck High School	FPAr - Concert Band - 12051	11		1.000	A	A		

[CLR Wallet](#) [Dashboard](#) [Privacy](#) [Terms](#)

Hello amiller@imglobal.org! [Logout](#)

A Comprehensive Learner Record (CLR) is a record of your curricular and non-curricular learning achievements. Each CLR comes from a single publisher (such as your school) and contains one or more of your achievements.

Learner

Name Alice Smith
Email AliceSmith@email.com
URL <https://au.demo.aefis.net/urn/student/1>
Student ID 123456789
SourcedId 818727

Publisher

Name AEFIS University
Email audemo@aefis.net
URL <https://au.demo.aefis.net>
Address 1429 Walnut Street, 10th Floor, Philadelphia, PA 19102
Phone +1 877-674-3122

Assessment for ENG 101 1 - Introduction to Mechanical Engineering I

Issued 8/7/2018 2:50:19 PM
Recipient email: AliceSmith@email.com
Term Fall Semester 2017
Verification Signed

Description Assessment for ENG 101 1 - Introduction to Mechanical Engineering I
Level Introduction
Type Label IMSAssessmentResult



Dashboard

Assemble CLRs from Profiles, Achievements and Assertions.

1. Create two or three profiles: one learner, one publisher, and one issuer if different than publisher.
2. Create at least one achievement.
3. Create at least one assertion of an achievement.
4. Create at least one CLR using the profiles and assertions you created.

You can also import a CLR JSON file and download a CLR to examine the JSON.

Profiles

Andy

Atlas University

PMC

[Manage](#)

Achievements

Objective 1
Issuer: Andy



Test A
Issuer: Atlas University

[Manage](#)

Assertions

Objective 1
Recipient: theafmiller...

Test A
Recipient: theafmiller...

[Manage](#)

CLRs

Publisher: Atlas Univer...
Learner: Andy

[Manage](#)

Total Alignments

1

Total Associations

1

Total Endorsements

3

Purchase Scholar Tokens

Tokens Quantity:

Purchase Tokens

Your Scholar Tokens Balance

SCHT balance:

29

?

Tokens received:

29

?

Tokens used:

0

?

Net tokens available:

29

?

Token Transaction History

	From	To	Purpose	Quantity	Transaction Date
1	Scholar Coin Main Wallet	World Book	Tokens Purchased	29	2019-08-03

Offer Transaction History

	Offer Name	Offer from Merchant	Discount Code	Tokens	Transaction Date
No offers redeemed yet.					



Profile

Opportunities

Dashboard



TIPS FOR AN AMAZING PROFILE

Your profile is 100% complete. >



Tina Smith

EDMONDSON-WESTSIDE HIGH, Maryland
High school student / Class of 2020

"I want to design video games." ✎

EXPORT

SHARE ▼

PREVIEW

Future Goals & Plans

What does your future look like so far? Sharing your direction, even if it's rough, can lead to opportunities.

CAREER INTERESTS



Computer Scientists Mechanical Engineers

LOCATION PREFERENCES



California Delaware Georgia South Carolina

NEXT STEPS



4-Year College

04

MAJORS CONSIDERING

- Computer Software Engineering
- Business Administration, Management And Operations

05

INTERESTED IN

- Oregon State University
- Jefferson University
- Clemson University
- University Of Louisiana At Lafayette

02

APPLIED TO

- Charleston Southern University
- Syracuse University

01

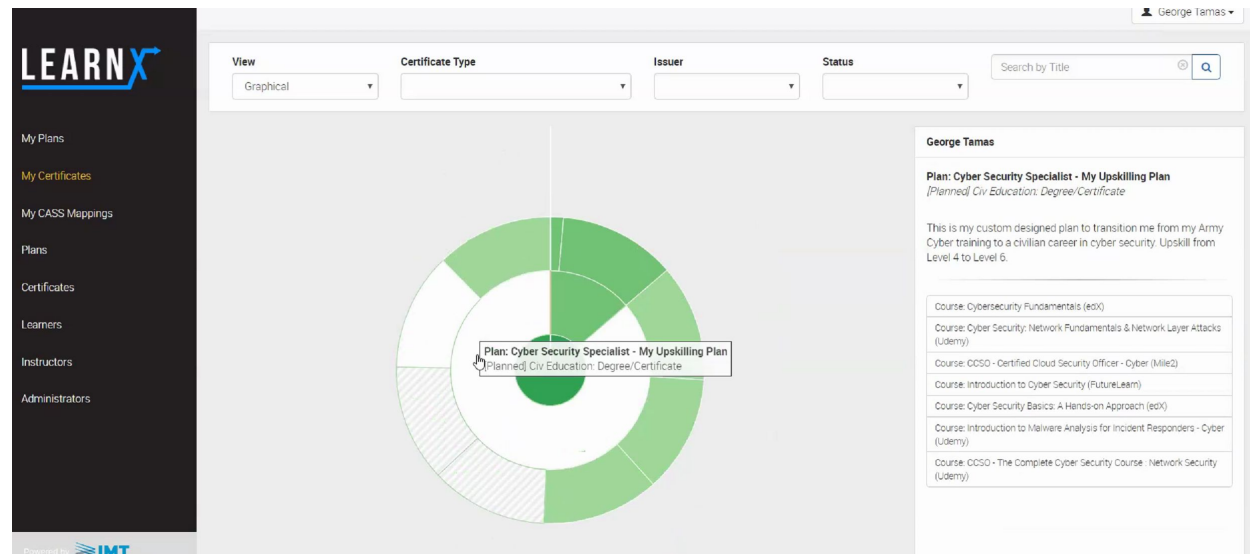
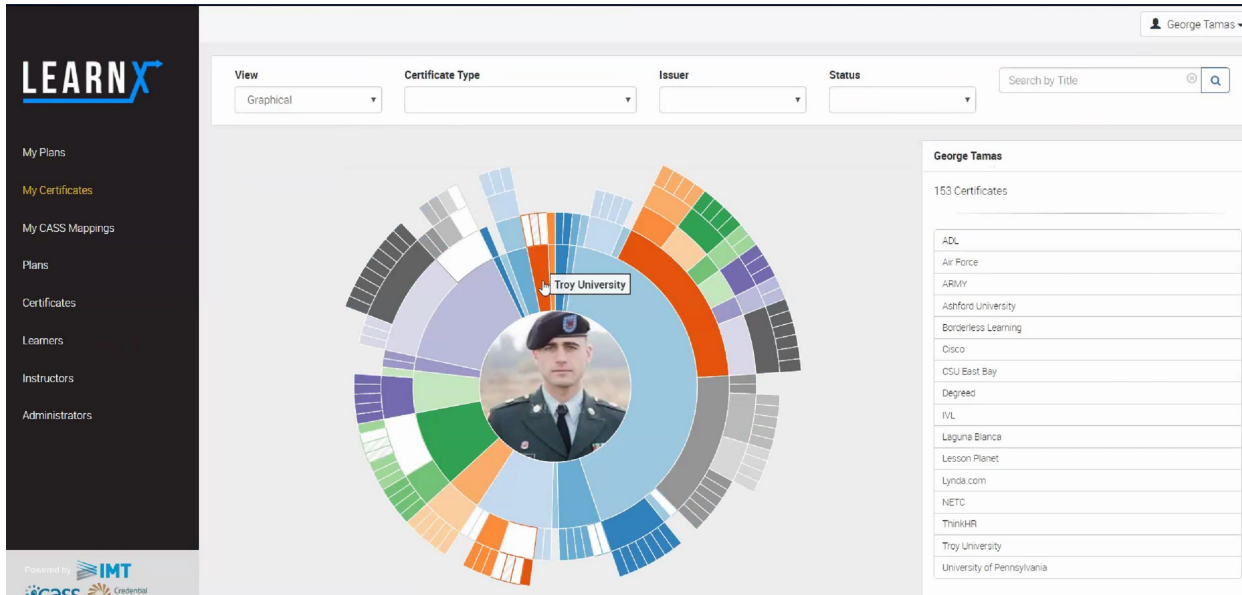
COMMITTED TO

- University Of Southern Indiana



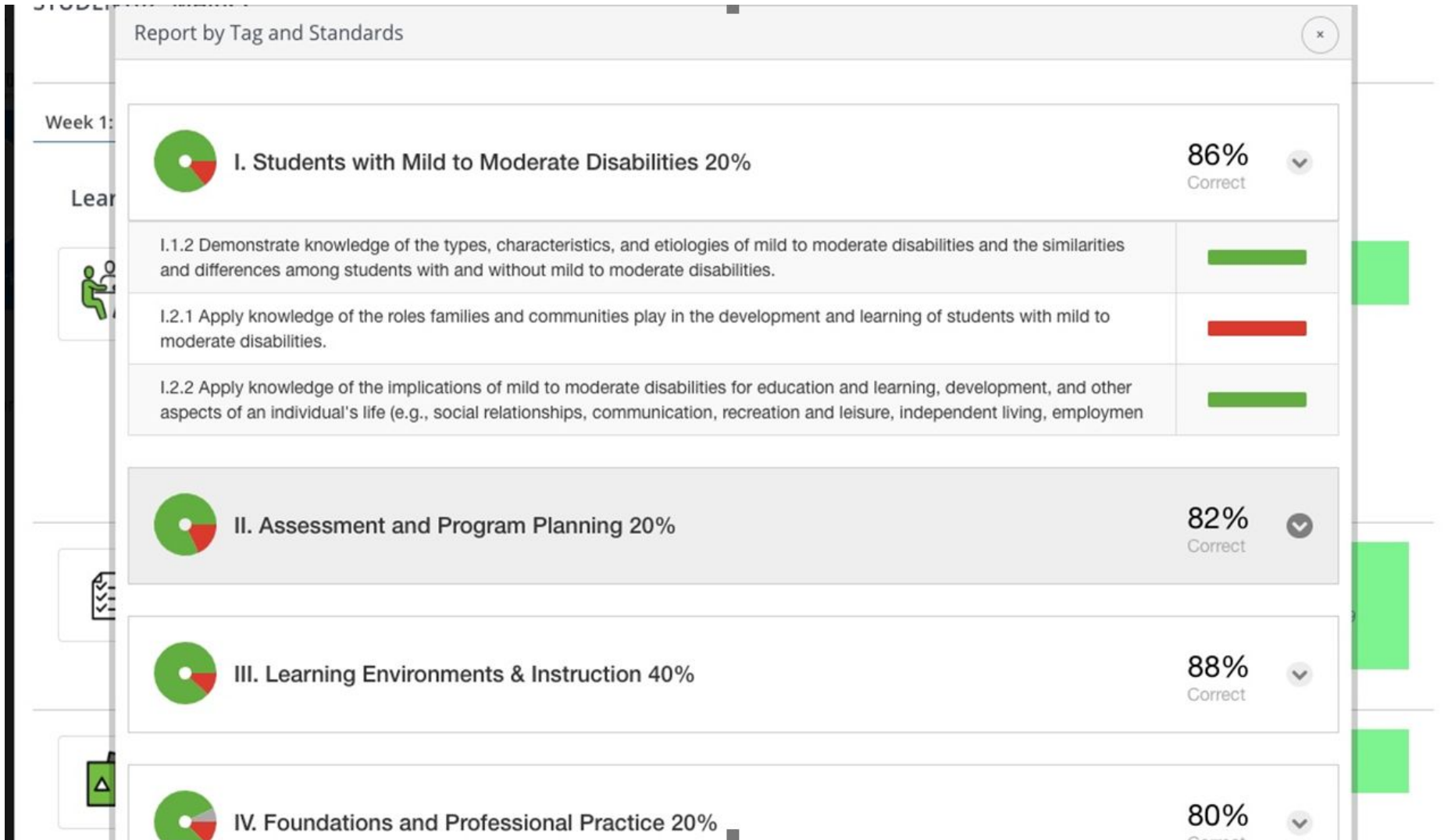
LearnX

Data Visualization of Pathways and Progress Wallet UI.



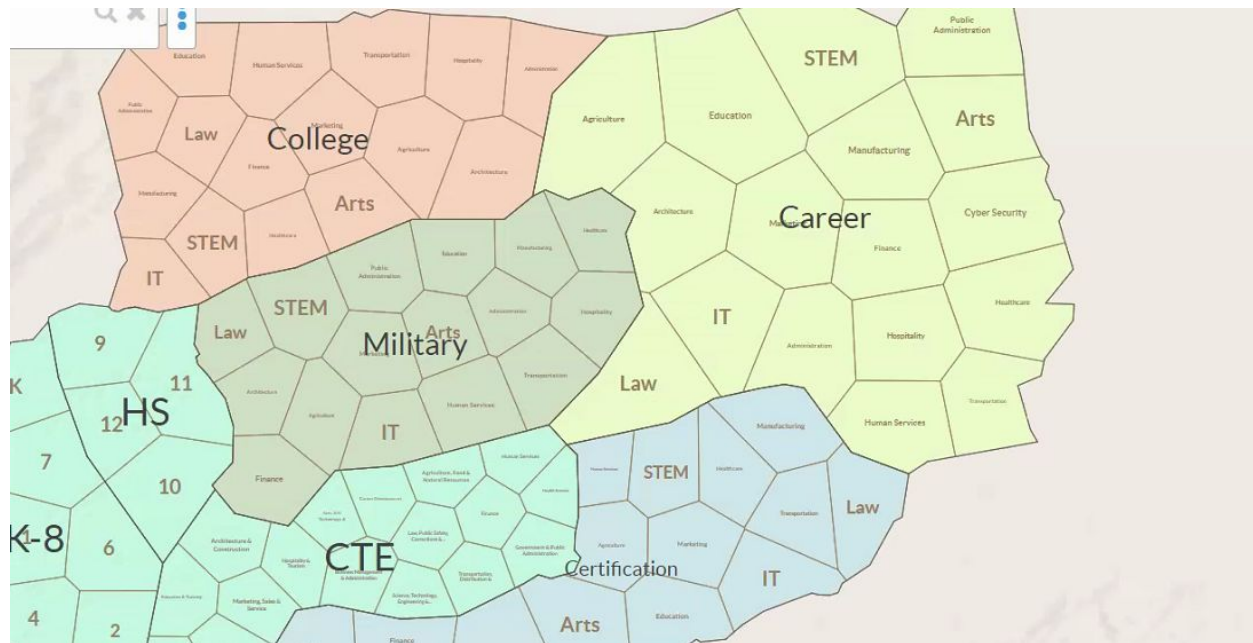
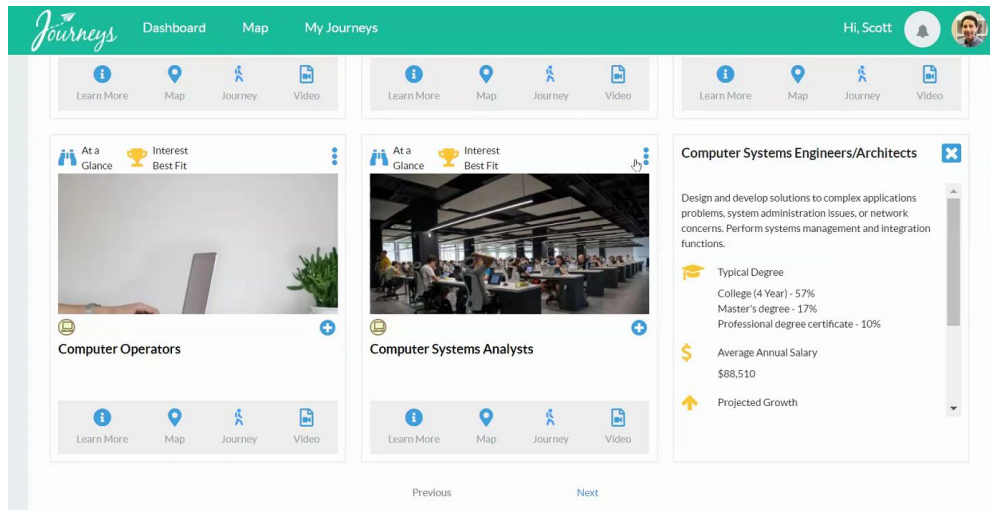
Core Learning Exchange

Personalized Learning Management System



JourneysMap

Data Visualization of Pathways and Progress Wallet UI.



Open Pathways for Learning

GAV is creating open pathway for learning

The screenshot displays the badgr Pathways interface in a web browser. The URL is <https://pathways.badgr.io/public/pathway/5ae1d012be9f4f57b31d2493/element/5ae1d012be9f4f57b31d2492>. The page features a dark blue header with the badgr Pathways logo and a 'SIGN IN' button. The main content area shows a learning pathway diagram with a central column of elements: 'Participation', 'Navigation', 'Communication', 'Create', 'Evaluation', 'Verified Effective Online Teaching course', 'New Instructor Preparation Course', and 'Teaching Online Practicum'. A red circle highlights the 'Verified Effective Online Teaching course' element. A detailed view of this element is shown on the right, titled 'Professional Online Teacher - Sample', with a description: 'The Georgia Virtual School employs highly qualified, certified online educators. The Professional Online Teacher credential signifies that a Georgia Virtual School instructor has a valid teaching certificate, training in effective online learning, and has completed the induction program.' Below this, a 'Required Children' section indicates that 10/10 children must complete the following elements: 'Verified Effective Online Teaching course' and 'New Instructor Preparation Course'. A legend at the bottom left identifies red circles as 'Selected Element' and purple circles as 'Required Children'. The bottom of the page shows a 'Spring 2018 PLS' element and a 'Professional Learning Symposium' element.

badgr Pathways

SIGN IN

Participation

Navigation

Communication

Create

Evaluation

Verified Effective Online Teaching course

New Instructor Preparation Course

Teaching Online Practicum

Professional Online Teacher - Sample

Published: Apr 26, 2018

Pathway Details

Professional Online Teacher - Sample

The Georgia Virtual School employs highly qualified, certified online educators. The Professional Online Teacher credential signifies that a Georgia Virtual School instructor has a valid teaching certificate, training in effective online learning, and has completed the induction program.

Required Children 10/10

A recipient must have completed ALL of the following child elements in order to complete this element.

Verified Effective Online Teaching course

New Instructor Preparation Course

Selected Element

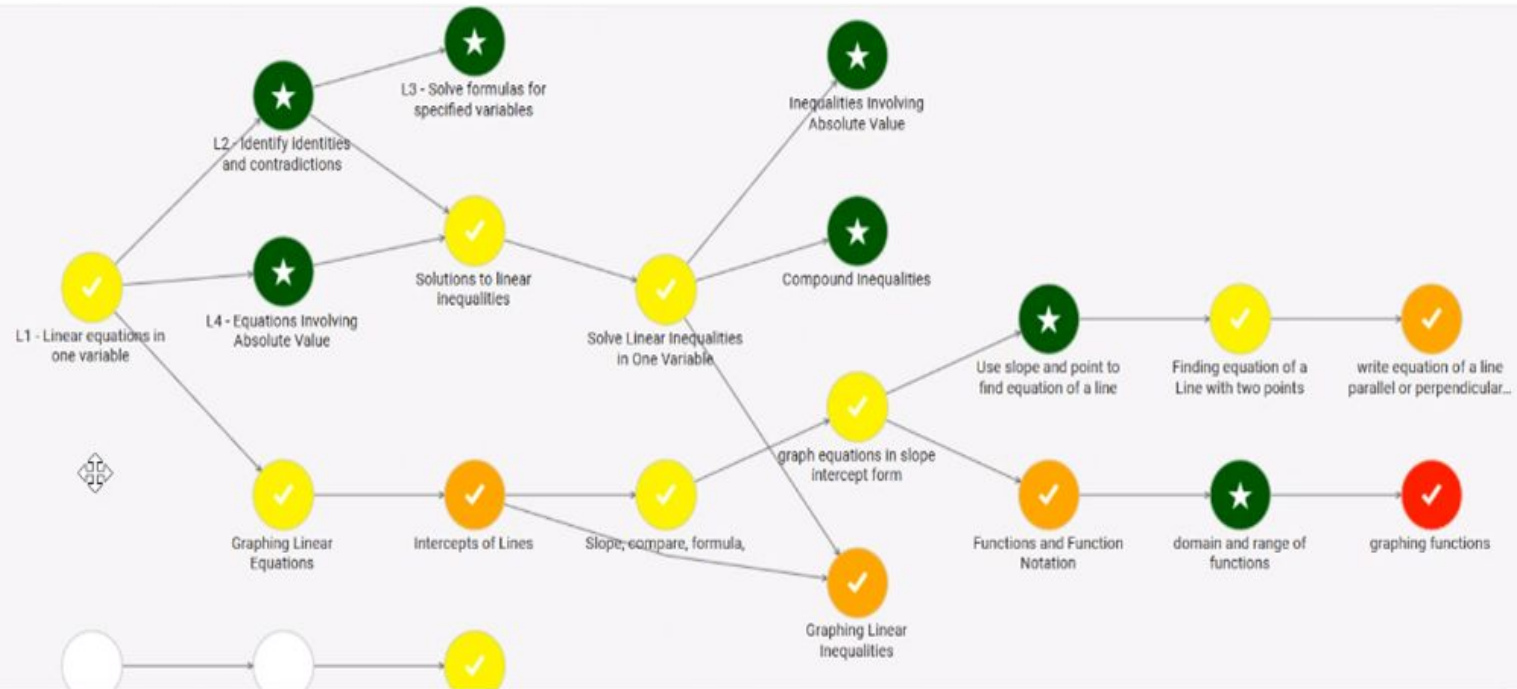
Required Children

Spring 2018 PLS

Professional Learning Symposium

Open Pathways for Learning

GAV is creating open pathway for learning



LIST ☐ + - X

Locked Available Completed Improving Passing Competent Master

Open Pathways for Learning

GAV is creating open pathway for learning

 PUBLIC CONSULTING GROUP

Courses / Elementary Math POC / Surface Area

Objective
 **Surface Area**

Notifications Contact Refresh Menu

What you have done so far



3/8

You have completed 3 out of 8 activities (38%) in this Objective.

Knowledge covered



Expert

Your Mastery level for the 3 activities that you have completed in this Objective is 84% — Expert

Spent: 7 min

Left: 1 hr

Time

What you should do next

Learn

Surface Area of Three Dimensional Figures using Nets - Real World Problems
Of the available activities this is the one that you've the best chance of completing now. It will take you about 15 minutes to learn.

Learn

Learn: Surface Area of a Right Prism - Real World Problems
This is one of the activities that is available to you, but not the one that I think you should do now.

Practice objective
This is a great way to improve and build on your existing knowledge before working on the remaining activities.

Determine knowledge
You should consider completing Determine knowledge as it will save you time by allowing you to move past activities that you already know.

Learning map

Your Learning map for this Objective contains 8 activities.



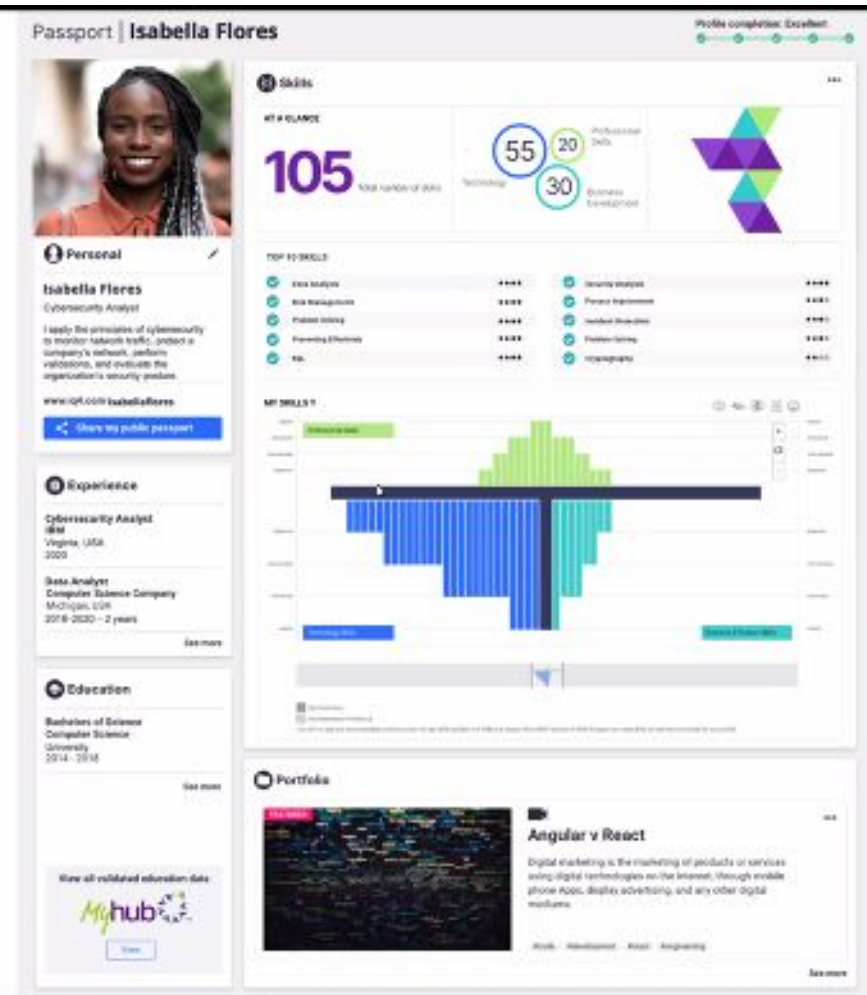
National Student Clearinghouse Wallet

Data Visualization of Pathways and Progress Wallet UI.

MyhubSM Universal Wallet

The new MyhubSM Universal Wallet being developed as part of the LER project will be ready for fall 2020.

- A single point of integration for all credentials (academic and co-curricular (CLR) and non-academic) whether they exist on the chain or not.
- **Learner** will leverage real-time market-based skills profiles to determine where they are and the path to obtain the necessary skills.
- **Institutions** (fee) will be able to assess and advise individuals, groups, classes based on skill gaps
- **Enterprise** (fee) will be able to do skill-based recruiting



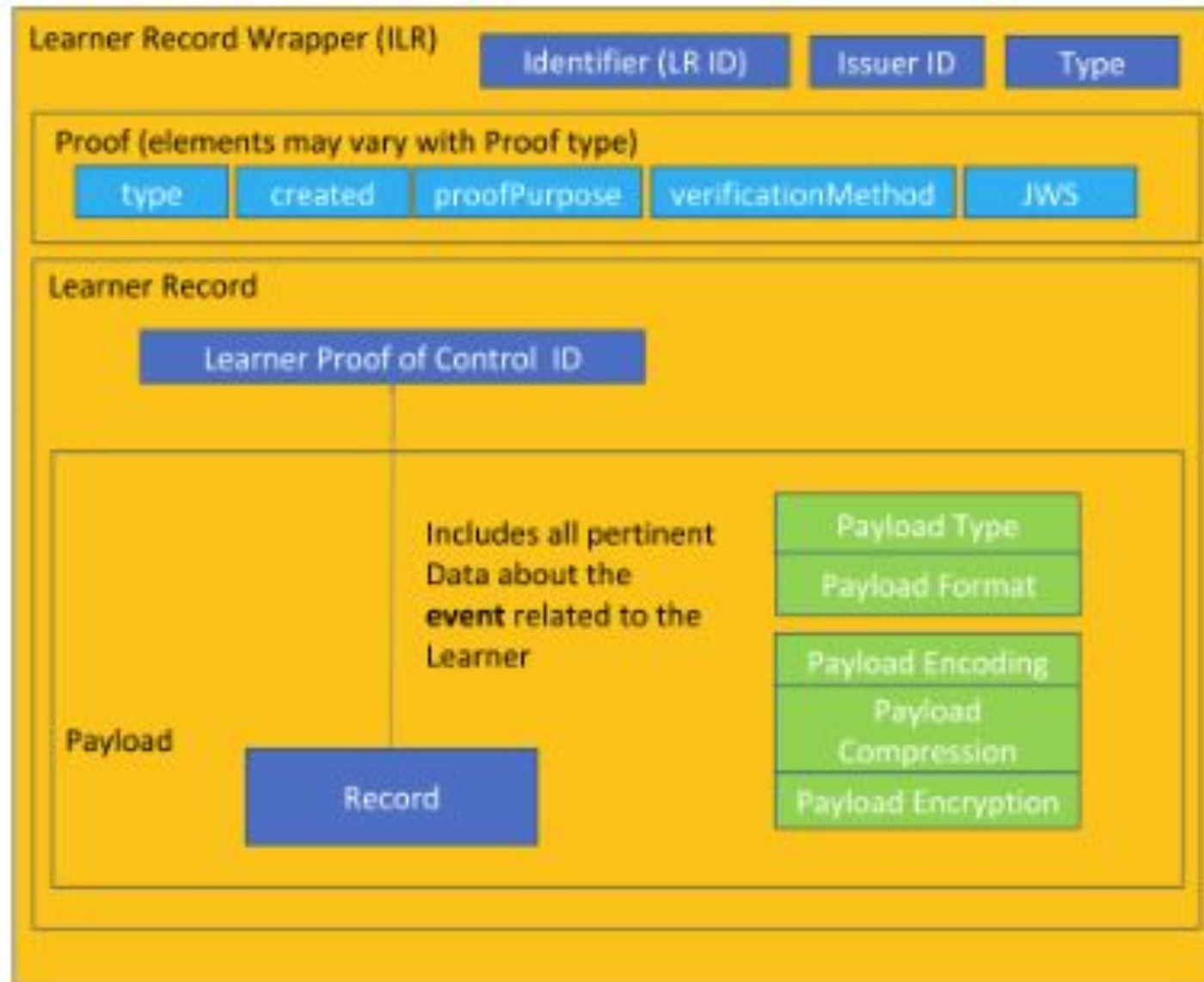
IEEE Interoperable Learner Record

Harmonize and profiled for easy implement

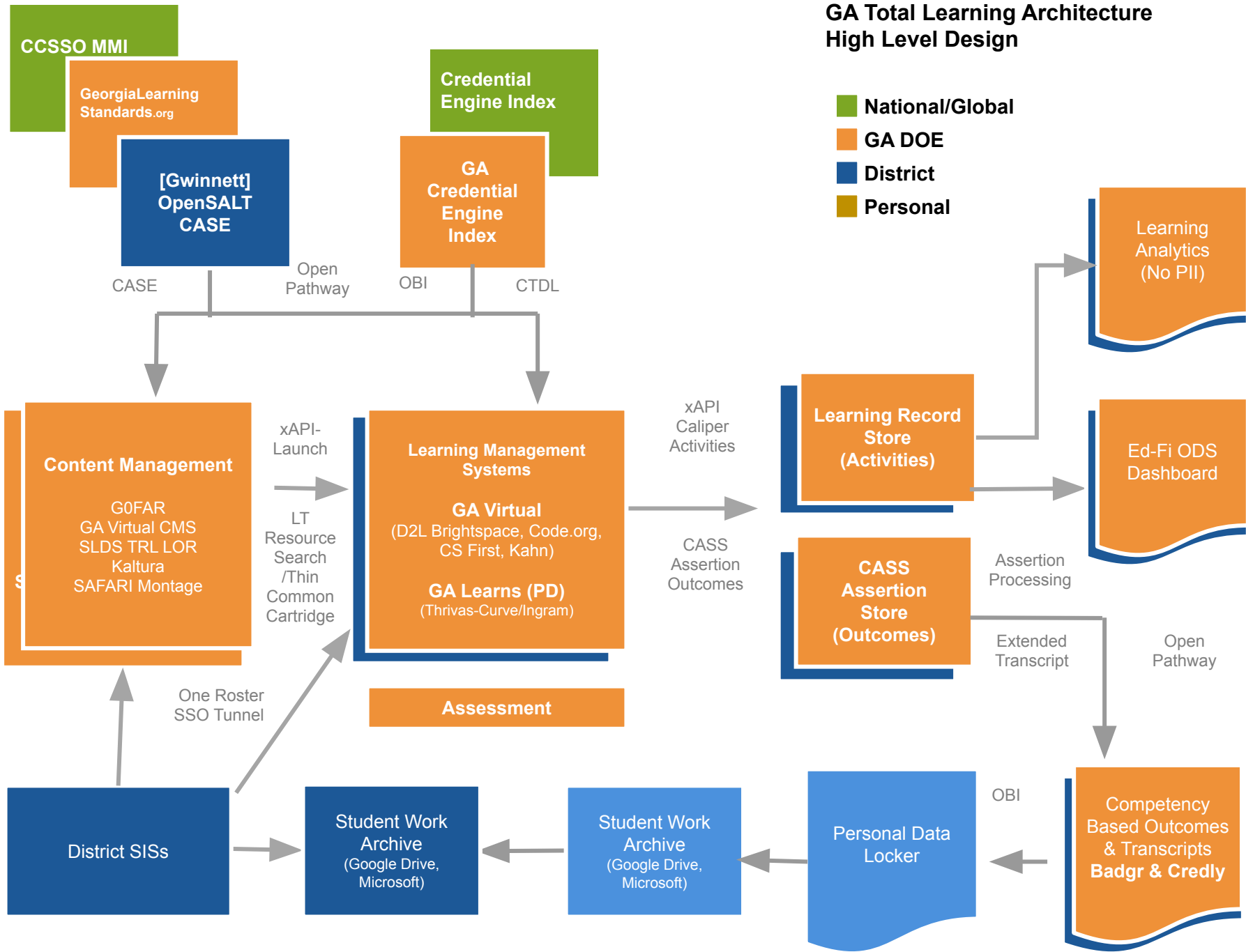
USED CEDS Conceptual Model		
ADL TLA Logical Model		
W3C DID + VC		
IMS Global CASE, CLR, OB		
PESC EdExchange	==>	IEEE-W3C-ISO ILR
EU EDCI, ELMO		
HR Open		
Credential Engine CTDL		

IEEE Interoperable Learner Record

Harmonize and profiled for easy implement



GA Total Learning Architecture
High Level Design



American Workforce Policy Advisory Board (AWPAB)

Interoperable Learner Record



US Chamber T3 Innovation Network

Learner Worker Military Learner Record

An affiliate of the [U.S. Chamber of Commerce](#)

[f](#) [t](#) [i](#) [v](#) [in](#)

SEARCH



U.S. Chamber of Commerce Foundation

CENTERS BLOG TOPICS EVENTS PUBLICATIONS ABOUT

The T3 Innovation Network

Building off of existing initiatives, the T3 Innovation Network is exploring the emerging technologies and standards in the talent marketplace to create more equitable and effective learning and career pathways.

Background & Reports

ILR Pilot Program

Join the T3 Movement

Meet the Network

T3 Network Pilot Projects

Technology and data are disrupting nearly every industry for the better, except education and workforce.

People often can't communicate what they know and are able to do in ways that are meaningful to employers. Yet employers, trying to find the right talent to fit their needs, rely on a person's ability to communicate the value of their skills and experience.

Our talent marketplace is fragmented, preventing an individual's record of learning from being transferable data. And any data that is collected, is siloed.

The T3 Innovation Network is solving that.

This network has grown to more than 300 organizations totaling around 700 individuals. This initiative brings stakeholders together to change the way we provide, access, and use educational and workforce data by using advanced technologies like AI, blockchain, and others to create an open and decentralized public-private data ecosystem.



JOIN THE T3 NETWORK

T3 ONE-PAGER

Take information about the T3 Network on the road with this one-page overview of the network and the pilot projects.

DOWNLOAD

OUR PARTNERS

Ed 3.0

Ed 3.0 - Total Learning Architecture

Student-Centered Learning

Events are *launched* – intentional- or *captured* - incidental



(Intersection of learner, organization, and resources)

Goals are *planned*

Tasks are *scheduled*

(Competencies)



Educational Alignment



(Experiences)

User created paths are *organized*



Default goal paths are *projected*



User augmented goals are *clarified*



Default structures are *prioritized*



User created structures are *curated*



User augmented experiences are *explored*



Technology mediated pathways are *recommended*



Unconstrained pathways

Constrained pathways

Unconstrained pathways

IEEE Interoperable Learner Record

Harmonize and profiled for easy implement

	Draft IEEE ILR Implementation Guide Scope				
	Identity	Planning	Assessment	Learning	Learning Economy
Education provider	1.1 Directory - relate programs and agencies, employ and assign staff, and enable parent/guardians to enroll their non-adult learner or adult learners to enroll themselves	2.1 Achievement Descriptions - establish the competencies, co-curricular activities, pathways, and crosswalks to other achievement description frameworks that will serve as linked data learning targets and credentials 2.2 Learning Resources/Instructional Materials - align curriculum and digital instructional materials, learning resources, and assessment items to linked data learning targets to create playlists for multiple pathways.	3.1 Achievement Assertions - assert a verifiable achievement level about a learner, referencing a linked-data description of the achievement, based on defined evaluation criteria and protocols	4.1 Learning Management - control access to learners' personal information to members and agents of that organization with legitimate educational purposes including learning analytics	
Educator	1.2 Employment - begin employment with an education agency and get access to communities of practice and rosters with class sections of learners	2.3 Lesson Plans - access district selected content and modify and plan for instructional delivery	3.2 Evidence - Evaluate student work and provide evidence for achievement assertions	4.2 Instructing - consuming CLR data to individualize instruction	
Learner	1.3 Enrollment - complete my portion of enrollment and gain access to my personal learning records and services	2.4 Pathways - select goals and pathways	3.3 Assessment - participate in assessments and view results	4.3 Learning - access optimal learning experiences in the next 'zone of proximal learning' along the pathway to my educational goals	5.1 CLR Wallet - curate verifiable assertions of linked-data description of the achievements and other credentials in a secure 'wallet' and control access to designated education providers and prospective/current employers.
Parent/guardian	1.4 Parent/Guardian Enrollment - enroll my non-adult learner in a school district or supplemental education provider	2.5 Individual Education Plan - participate in evaluation meetings	3.4 Support - view assessment results and other achievement assertions and provide support	4.4 Monitor and Motivate - ensure basic needs are met and help manage time and motivation to try hard things and ask for help when challenged	5.2 Consent - control access to specific portions of my non-adult learner's personal record (by anyone outside of the education provider that issued the record) to specific individuals or organizations for specific periods of time
Employer					6.1 Talent Signaling - define jobs based on linked-data competencies and other desired characteristics and requirements 6.2 Job Data Exchange - match shared verifiable assertions of linked-data description of the achievements and other credentials to identify qualified candidates for positions
Specs	DID, OneRoster	CTDL, CASE, LTI	VC, CLR, QTI, PESC	xAPI, Caliper	Schema, O*NET
Shared Service Utilities	EdExchange	Credential Registry CASE Network Registry	Dynamic Market	Dynamic Market	JDX

Ed 3.0 - Personalized, Competency-Based Learning

Student-Centered Learning

Via **Cisco** Webex
New York
9:36 PM ET



CNN GLOBAL TOWN HALL

THE FUTURE OF COLLEGE AMID CORONAVIRUS

 Callie Russell @CallieRussel

Does A positive blood type affect your likelihood of getting Covid 19? [#CNNTownHall](#)

LIVE
CNN
AC360°

Ed 3.0 - Personalized, Competency-Based Learning

Student-Centered Learning

TECHNOLOGY

Google Has a Plan to Disrupt the College Degree

Google's new certificate program takes only six months to complete, and will be a fraction of the cost of college. [↗](#)

BY JUSTIN BARISO, AUTHOR, EQ APPLIED @JUSTINJBARISO



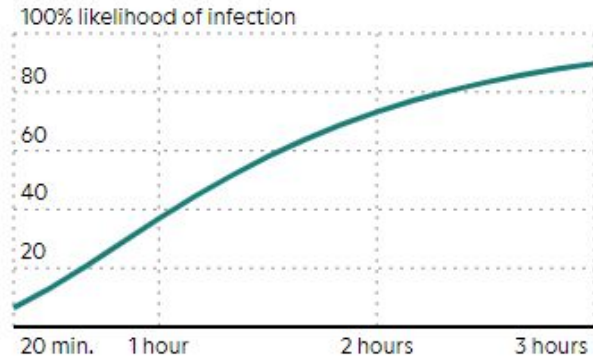
Photo: Getty Images/Illustration: Chloe Krammel

Remote Learning

Student-Centered Learning

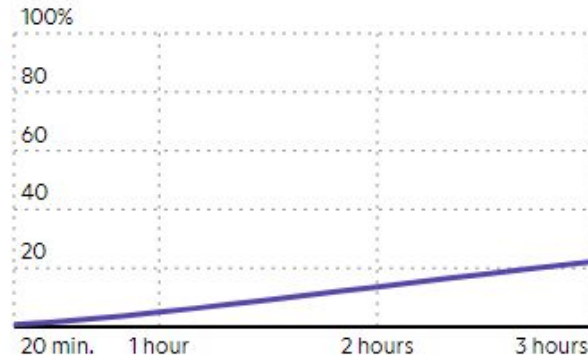
An indoor gathering

A poorly ventilated space with pervasive talking and movement



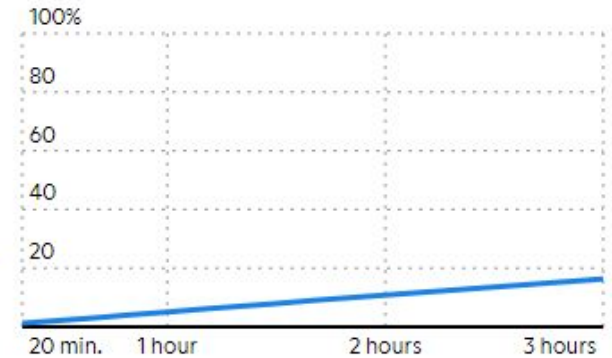
An energy-efficient office

A space with very low airflow and moderate talking and movement



A classroom lecture

A well-ventilated room with one primary speaker, such as a teacher, and a group of listeners



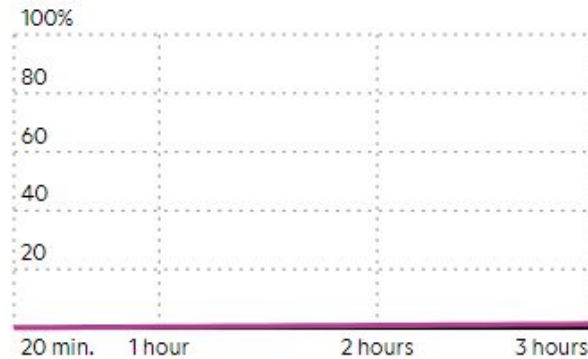
Strenuous outdoor activity

Vigorous exercise in direct sunlight



A subway ride

Well-ventilated public transit system with minimal talking and movement



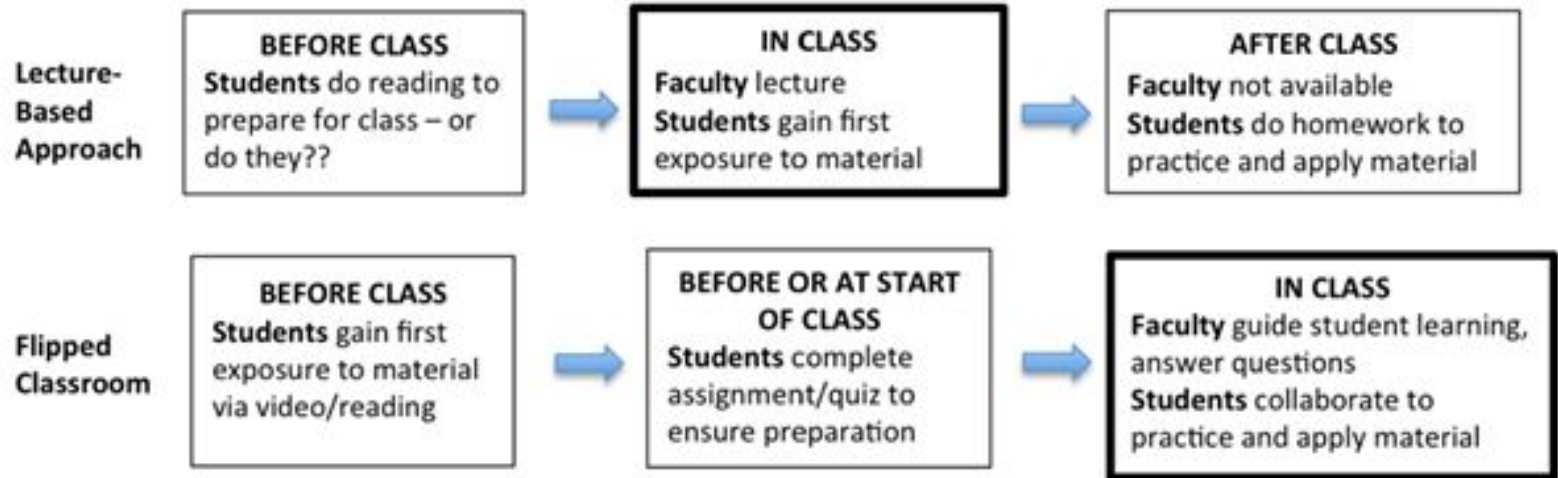
A bus ride

Decently ventilated public transit mode with minimal talking and movement



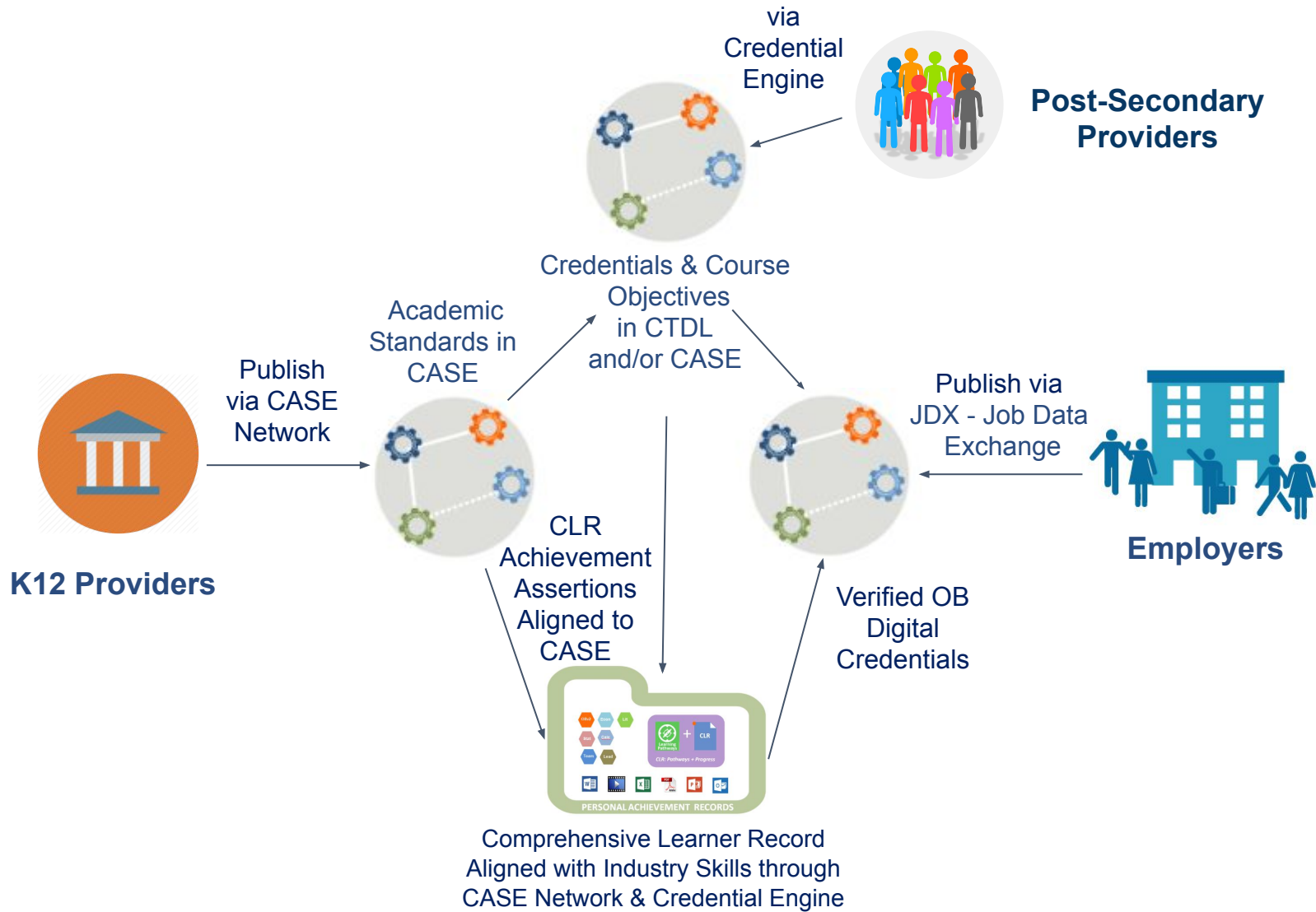
Big Idea - Flip the Virtual Classroom

Student-Centered Learning



Education 3.0

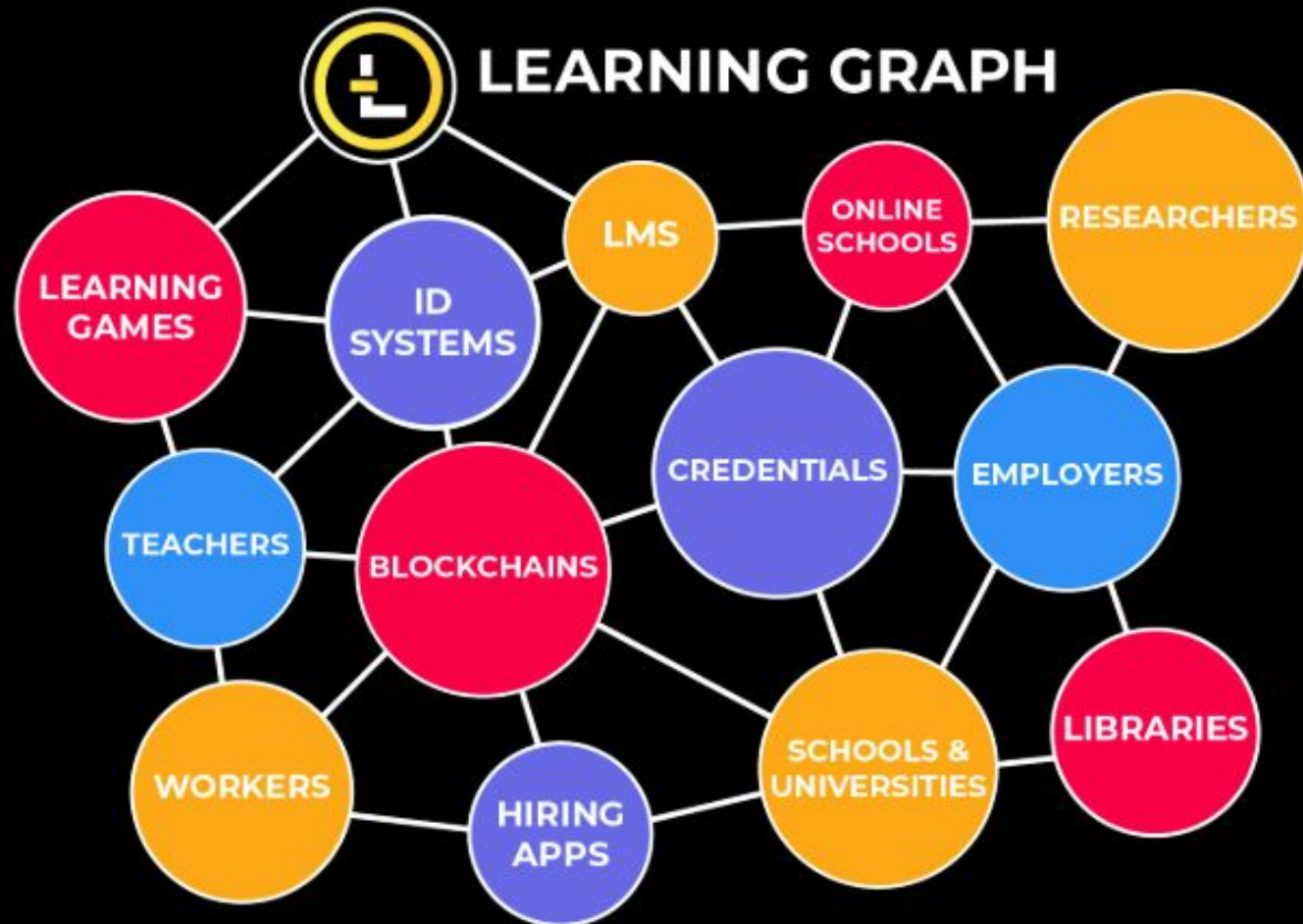
Personalized, Competency-Based, Blended Learning



K12 -> Higher Ed -> Workforce Pathways

The Internet of Education

What if educators, students, employers, and technologies could all translate value and information without sacrificing privacy or proprietary value?



GPS

Destination: Prepared for Post Secondary Success

SPED IEP



DIFFERENTIATED
INSTRUCTION



AFTER
SCHOOL



98%

Attendance

Current location: School
Elapsed time: 25 days

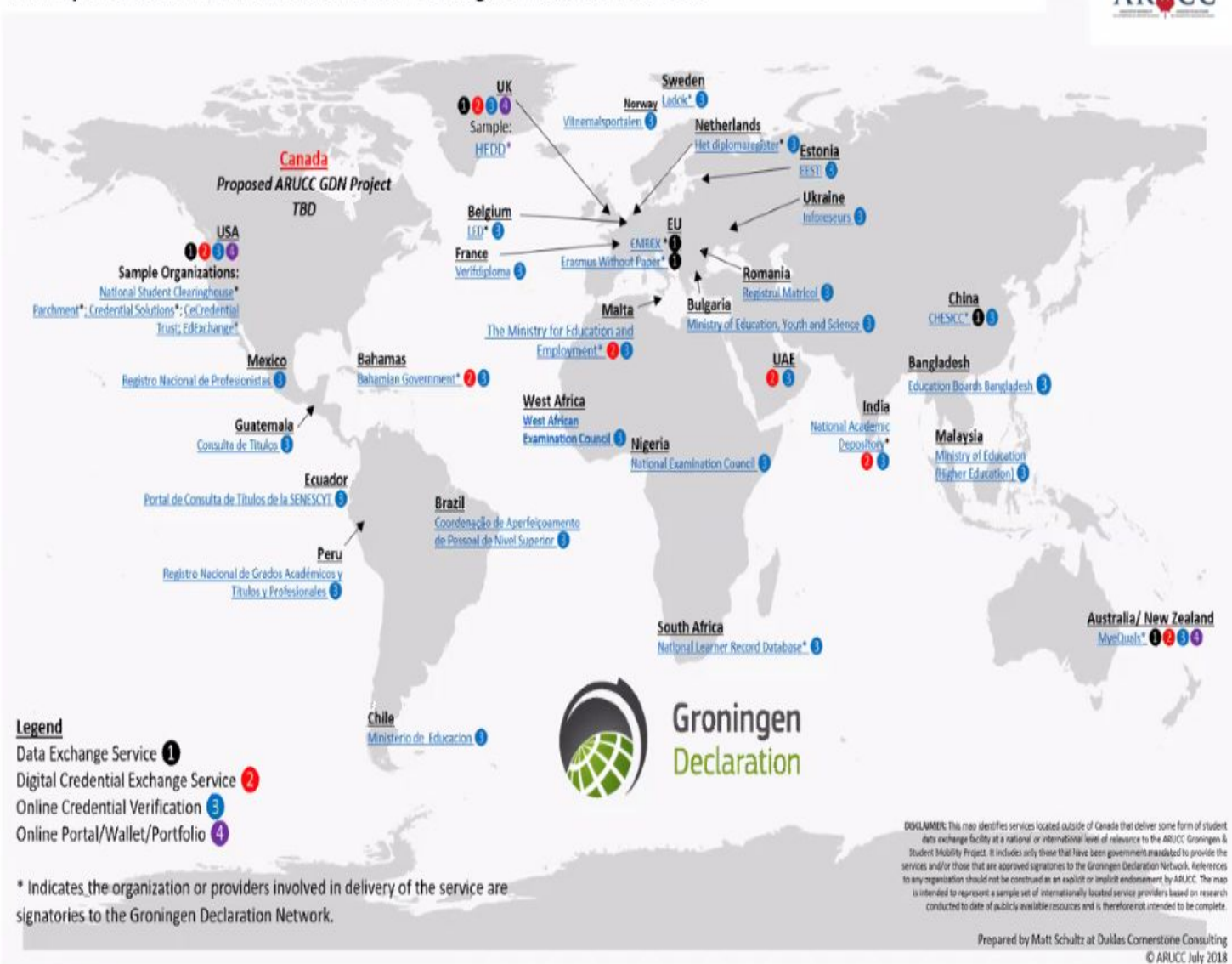


Calculating route

P-20 SLDS

UN SDG and Groningen Declaration

A Sample of National Level Student Data Exchange & Validation Services

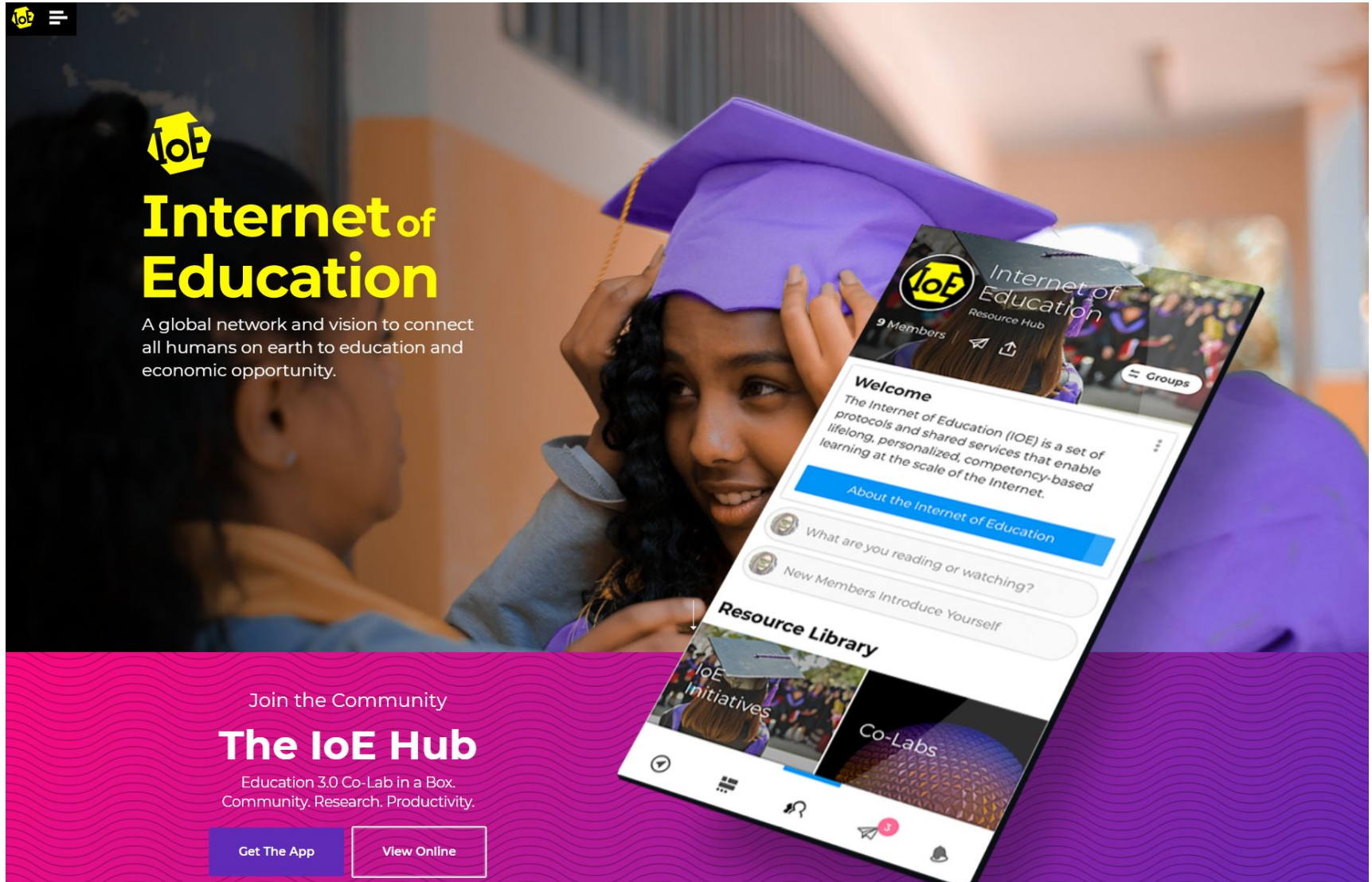


Talent Supply Chain Landscape Map

Open Standards/Recommended Practices CEDS , DIF Interop Working Group , W3C VC/vc-ed , IMS Global CLR , CTDL , PESC , HR Open , CE Interoperable Learner/Worker Record Guide , US Chamber T3 , US DOC AWPAB , LER Wrapper , IEE ILR Recommended Practices .	Open Source Projects Blockcert , Canis , Aries VCR , OpenSALT.org , Competency and Skills System (CASS) , OCF-collab.org , Open Wallet Architecture , IEEE SA Open Source , IEEE ILR/loE Open Source .
Shared Utilities Identity - DIF Community , Technical Stack Working Group , Governance Stack Working Group , ToIP , IoE Trust Registry (ITR) , EU Trusted Issuer Referential/Ledger , GLEIF - Skills - ESCO , Emsi Skills , Credential Registry , IMS Global CASE Network , SkillSuite , D2L ASN , EdGate , ISKME , MatchMaker , OpenTaxonomy.org .	Collaboration Networks Groningen Declaration Network , European Blockchain Services Infrastructure (EBSI) , Ed 3.0 Research Network , ASU Trusted Learner Network , Broward Equity Co-Lab , CO C-Lab , ND ILR Co-Lab , Asia-Pacific AP-Lab , T3 Innovation Network , Open Skills Network , Velocity Network Foundation , International Council on Badges & Credentials , NM Higher Education , Workcred .

Internet of Education.org

A friendly front door to education interoperability at the scale of the Internet



The background image shows a young woman with dark curly hair wearing a purple graduation cap and gown, smiling and holding a smartphone. The phone screen displays the Internet of Education (IoE) app interface. The interface includes a header with the IoE logo and a hamburger menu, a 'Welcome' section with a description of the IoE, a 'Resource Library' section with 'IoE Initiatives' and 'Co-Labs' cards, and a bottom navigation bar with icons for home, search, and notifications. The bottom of the page features a pink and purple wavy pattern with text and buttons.

Internet of Education

A global network and vision to connect all humans on earth to education and economic opportunity.

Join the Community

The IoE Hub

Education 3.0 Co-Lab in a Box.
Community. Research. Productivity.

[Get The App](#) [View Online](#)

Internet of Education.org

Principles

1. **One Open Internet; One Open IoE.** There is only one open IoE. We will work together to protect and connect all network nodes and ensure the IoE equitably benefits humanity.
2. **Weak Center.** Like the vision for the Internet, we will ensure that no one organization asserts more control than is needed to enable shared advancement and interoperability between all IoE network nodes.
3. **Effective Collaboration.** We will empower all stewards of the IoE to make prompt, precise, and mutually beneficial decisions in order to advance the shared mission, principles, and protocols of the IoE.
4. **Open Standards.** We will develop, promote, publish and/or adopt, without restriction, technical and academic standards that align to the practices and principles outlined by [OpenStand](#).
5. **Open Participation.** We will ensure that any individual, group, or organization can access and participate at no cost. The only requirement will be to pledge commitment to these guiding principles.
6. **Proportional Influence.** We will ensure that the relative influence in resolving any contested decisions be proportional to the number and diversity of learners representing the nodes of the active IoE network.
7. **Diversity, Equity & Inclusion.** We will advocate for and support historically marginalized groups, address individual and cultural bias, and work to dissolve structural barriers through civil discourse and the creative and humane use of technology.
8. **Data Dignity.** We will develop, adopt, and promote technologies and data practices that place people over profits so the IoE becomes a public good that puts humans and their data first.
9. **Agency & Access Control.** We will ensure that all learner records are accessible and/or controlled by the individual (or their guardian) and that all identity systems are transparent and aim to preserve privacy and data agency.
10. **Lifelong Learning.** We will recognize and support ALL educational experiences that result in positive human development and acknowledge that learning begins at birth and continues throughout the lifetime of everyone on earth.



Public Consulting Group

PCG is consulting firm with a mission to provide solutions that matter for public sector clients

- Employ over 3000+ professionals in 60+ offices located across the US, Canada, UK, Australia, and Poland
- Improve impact in Education, Health, Human Services, Developmental Disabilities
- Project work and clients in all 50 states, 6 Canadian provinces, and most recently all 6 Australian states
- Core services include: consulting, information technology, and ongoing operations support



Collaborative Laboratories (Co-Labs)

Managing stakeholders to achieve network of networks

- A co-lab is a group of city, district, state, national, or regional stakeholders with a common goal for new or upgraded education and/or employment infrastructures.
- Co-Labs are the engine of the Internet of Education (IoE); a global network and vision to connect all humans on earth to education and economic opportunity. This is a future that will allow verifiable skills, credentials, and degrees to transfer directly from learners to institutions and employers.
- Each Co-Lab has unique localized goals that could include: digital IDs and wallets, universal issuer & credential registries, skills libraries, learning marketplaces, learning and career pathways, education currencies, data trusts and translators, learning and employment analytics, and/or shared services.
- By convening stakeholders, mapping data flows, and developing and piloting a variety of exponential technologies and applications with an aligned and devoted consortium of partners, Co-Labs provide the incubation hubs needed.

Case Study: IMS CASE Network

A public-private partnership to support exchange of OER content and support personalized, competency-based learning



IMS GLOBAL
CASE NETWORK

Login

Register



Competency Frameworks

Find framework...

- ▶ ACT, Inc.
- ▶ Alabama Department of Education
- ▶ Alaska Department of Education & Early Development
- ▶ Arizona Department of Education
- ▶ Arkansas Department of Education
- ▶ California Department of Education
- ▶ College Board: AP Computer Science Standards
- ▶ Colorado Department of Education
- ▶ Common Core (CCSSO)
- ▶ Computer Science Teachers Association (CSTA)
- ▶ Connecticut Department of Education
- ▶ Delaware Department of Education
- ▶ Florida Department Of Education
- ▶ Georgia DOE
- ▶ Hawaii State Department of Education
- ▶ Idaho State Department of Education

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IMS GLOBAL
Learning Consortium
Better Learning From Better Learning Technology™

Case Study: Carnegie Learning

NY Current Standard

New York State Next Generation English Language Arts Learning Standards

11-12R1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly/implicitly and make logical inferences, including determining where the text is ambiguous; develop questions for deeper understanding and for further exploration. (RI&RL)

...

MA Suggested Standard

Massachusetts Curriculum Framework for English Language Arts and Literacy

RI.11-12.1

Cite strong and thorough textual evidence to support analysis of what a text states explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RI.11-12.1

Cite strong and thorough textual evidence to support analysis of what the text says states explicitly/implicitly and as make well logical as inferences drawn from the text, including determining where the text is leaves ambiguous matters develop questions for deeper understanding and for further exploration uncertain. (RI&RL)

...

CW Grade 11 - ELA - NY

The New York State grade 11 curriculum modules continue to develop students' skills in analyzing complex literary and informational texts as students delve deeply into works by acclaimed authors and historical figures, including classics from William Shakespeare, Virginia Woolf, and Kate Chopin; seminal pieces from W.E.B. Du Bois, Booker T. Washington, and Elie Wiesel; and contemporary literature from Tim O'Brien and Louise Erdrich.

Unit 1: "Then all smiles stopped together."

The first unit begins with a close reading of Robert Browning's "My Last Duchess," in which students examine character development and choices regarding point of view as they analyze the development of central ideas in the poem.

BOOKMARK Reading of "My Last Duchess"

ARTICLE My Last Duchess by Robert Browning



Standard NY

11-12R1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly/implicitly and make logical inferences, including determining where the text is ambiguous; develop questions for deeper understanding and for further exploration. (RI&RL)

Literacy Skills and Habits

Read closely for textual details

Standard NY

11-12R2 Determine two or more themes or central ideas in a text and analyze their development, including how they emerge and are shaped and refined by specific details; objectively and accurately summarize a complex text. (RI&RL)

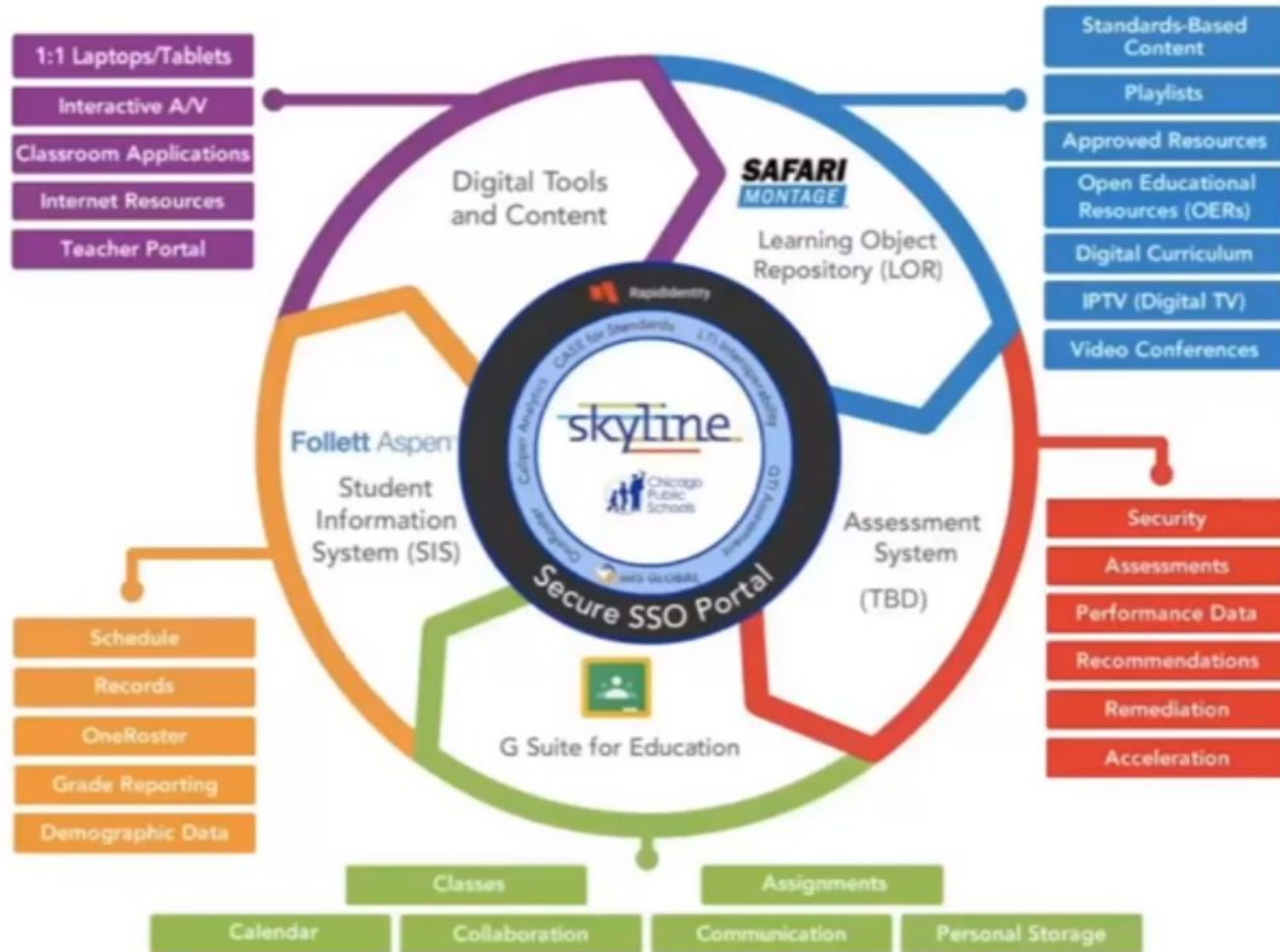
Literacy Skills and Habits

Question texts during reading to deepen understanding

Standard NY

Case Study: Chicago Public Schools

Dynamic OER Content Curation and LTI Resource Search



Case Study: PathCheck COVID Passport

Personal data control of verifiable COVID personal data

9:56 results.resolvemdx.com

Collected
9/28/2020

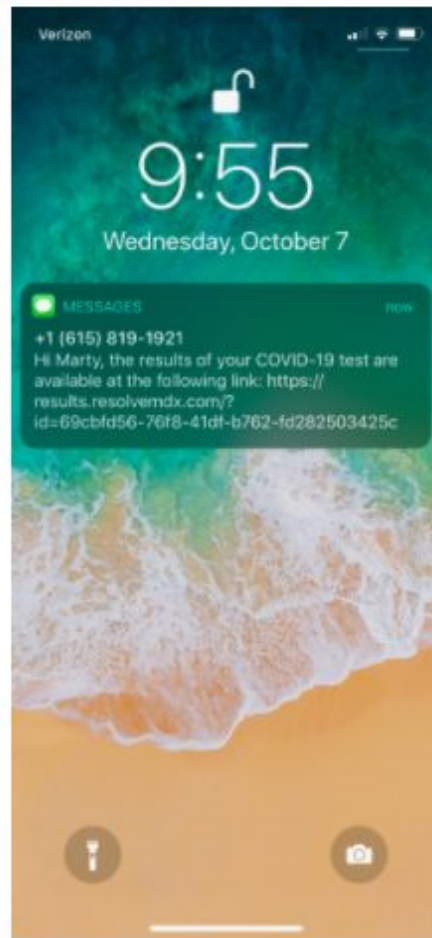
Received
9/28/2020

Reported
9/29/2020

Source
Nasal Swab

Tested For	Result
SARS-CoV-2 PCR	NEGATIVE

This test was developed by ThermoFisher, its performance characteristics determined by Resolve Molecular Diagnostics, LLC. This test has not been FDA cleared or approved. This test has been authorized by FDA under an Emergency Use Authorization (EUA). This test has been validated in accordance with the FDA's Guidance Document (Policy for Diagnostics Testing in Laboratories Certified to Perform High Complexity Testing under CLIA prior to Emergency Use Authorization for Coronavirus Disease-2019 during the Public Health Emergency) issued on February 29th, 2020. FDA independent review of this validation is pending. This test is only authorized for the duration of time the declaration that circumstances exist justifying the authorization of the emergency use of in vitro diagnostic tests for detection of SARS-CoV-2 virus and/or diagnosis of COVID-19 infection under section 564(b)(1) of the Act, 21 U.S.C. 360bbb3(b)(1), unless the authorization is terminated or revoked sooner.



9:55 results.resolvemdx.com

RESOLVE MDx

Patient Results Portal

Login to view, download, and email your test results

Last Name

Date of Birth

Sign in

If you believe you have received this message by mistake, please ignore.

© 2020 Resolve Molecular Diagnostics

9:56 results.resolvemdx.com

RESOLVE MDx

[Download PDF](#) | [Email](#) | [Logout](#)

SARS-CoV-2 PCR:
NEGATIVE

Patient Information

Reed, Marty
555 Main Street
Franklin, TN 37064
615-207-7590

DOB
1/11/1977

Sex
M

Ethnicity
WHITE

CASE Study: ND Co-Lab

Open Credential Publisher, CLR Wallet, Verifiable Credential

The screenshot shows the CLR Wallet interface for a user named Jenna Robertson. The top navigation bar includes links for Credentials, Folio, Transactions, and a Logout button. The main dashboard is divided into several sections: a user profile card on the left, a 'Recent Updates' section in the middle, a 'New Data' section on the right, and a 'Data Highlights' section on the far right. The user profile card displays the user's name, ID (TNED2350687), education (Bismarck High School), graduation date (May 2022), and birth date (February 12, 2020). The 'Recent Updates' section lists three recent validations. The 'New Data' section lists three new credentials: English 11, AP Calculus, and Physics STEM Certification. The 'Data Highlights' section shows 'Graduation' and 'ACT/SAT TEST' with 'VIEW CREDENTIAL' buttons. At the bottom, there is a 'Credentials' section with filters for Grade Level, Issuer, Term, and Date Issued, and a search bar. The footer shows a home icon, navigation arrows, and the page number '3 of 12'.

CLR WALLET Credentials Folio Transactions Logout

Jenna Robertson
TNED2350687

EDUCATION
Bismarck High School

GRADUATION
May 2022 (expected)

DOB
February 12, 2020

ACTIVE CREDENTIALS
39

DASHBOARD

Recent Updates

- 07.13.2020 | 07:30 PM
Your portfolio database was validated and is ready for transactions.
- 06.24.2020 | 06:20 PM
History 11 was validated by Bismarck High School.
- 06.22.2020 | 11:20 AM
The Khan Academy Algebra Polynomial certification was updated from Khan Academy portal.

New Data

- English 11**
This credential is validated and was updated to your profile.
- AP Calculus**
This credential is validated and was updated to your profile.
- Physics STEM Certification**
This credential is validated and was updated to your profile.

Data Highlights

Graduation
View scores and test results.
[VIEW CREDENTIAL](#)

ACT/SAT TEST
View the latest score from January 22, 2020.
[VIEW CREDENTIAL](#)

Credentials
VIEW: [ALL](#) | CATEGORY

CREATE FOLIO

FILTER BY:

Grade Level ▼ Issuer ▼ Term ▼ Date Issued ▼

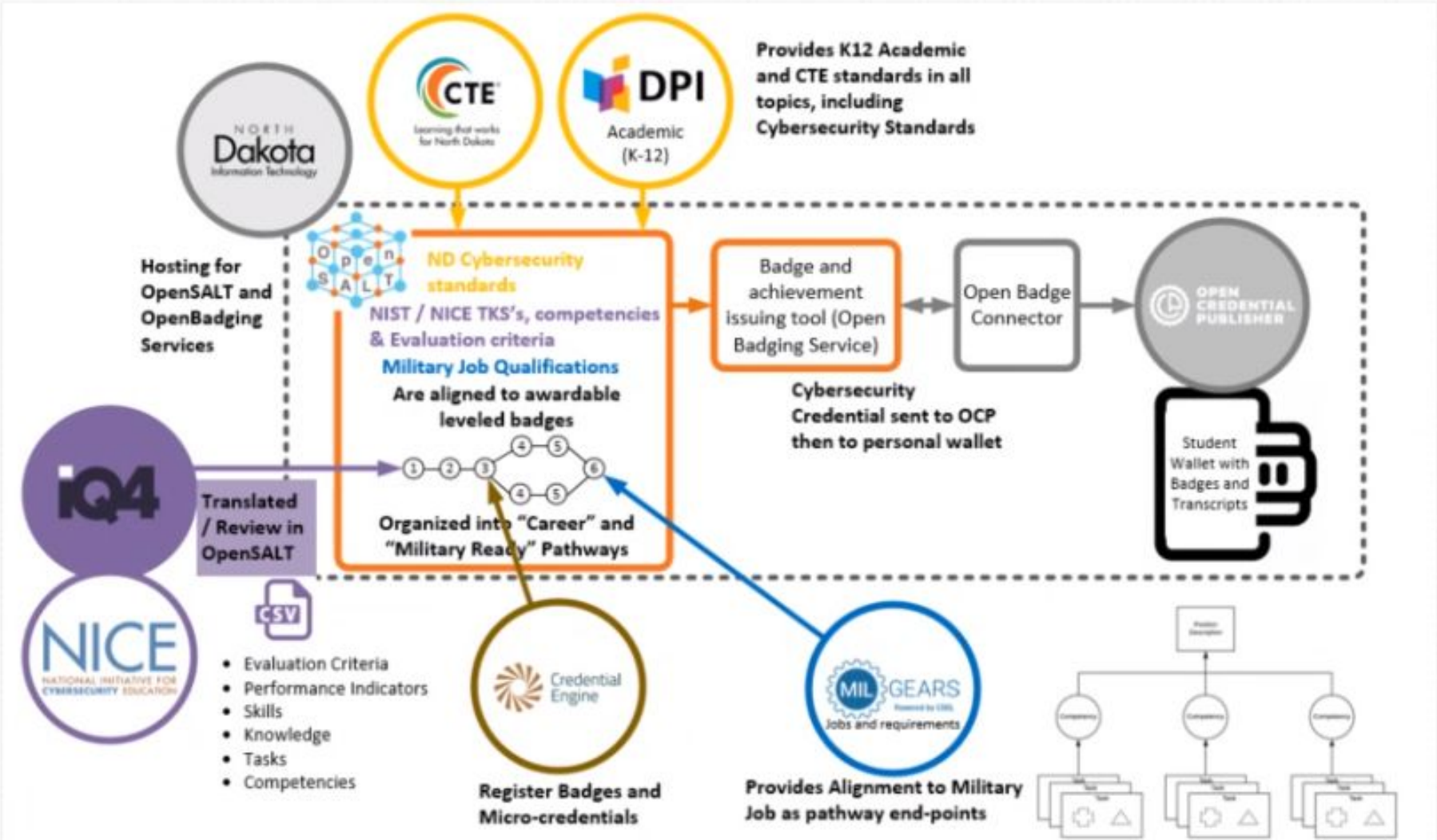
Grade 11 x Grade 12 x Grade 09 x

SEARCH 🔍

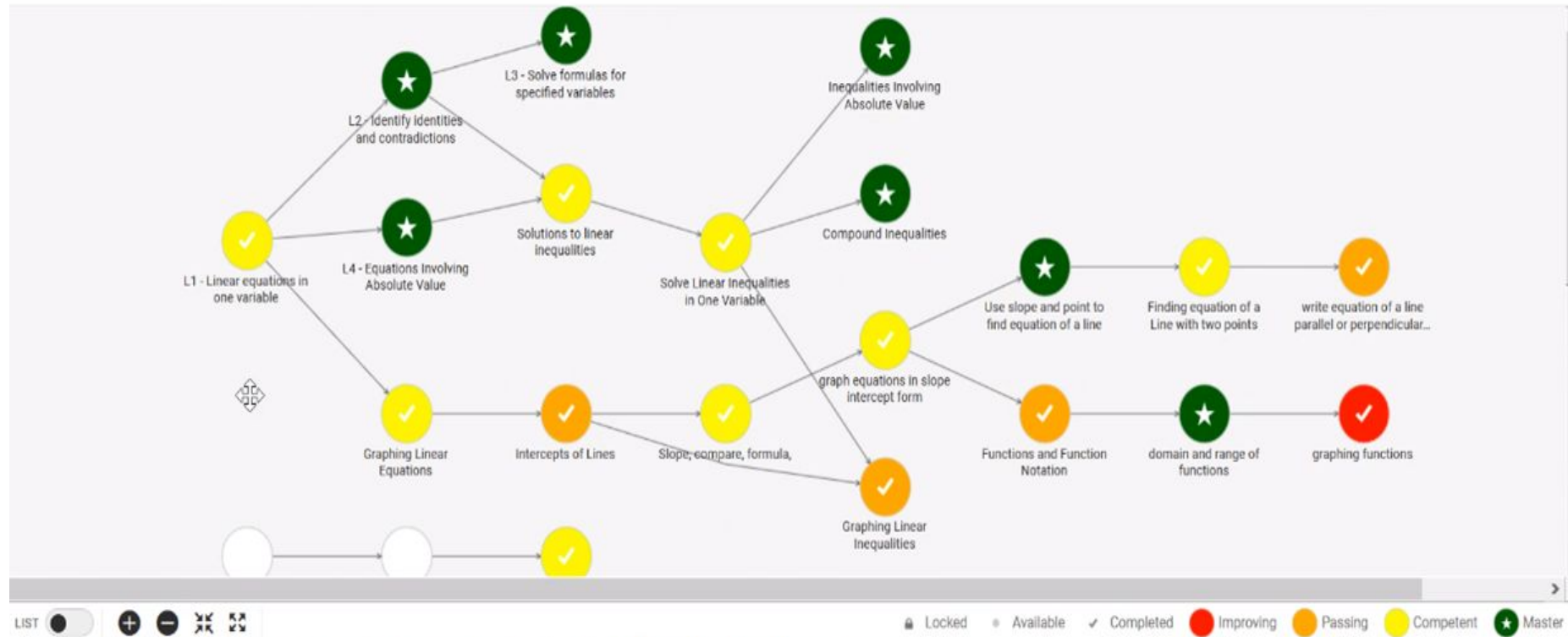
3 of 12

CASE Study: ND Co-Lab

Open Credential Publisher, CLR Wallet, Verifiable Credential



Case Study: ETS Praxis Learning Pathway



Case Study: National Student Clearinghouse



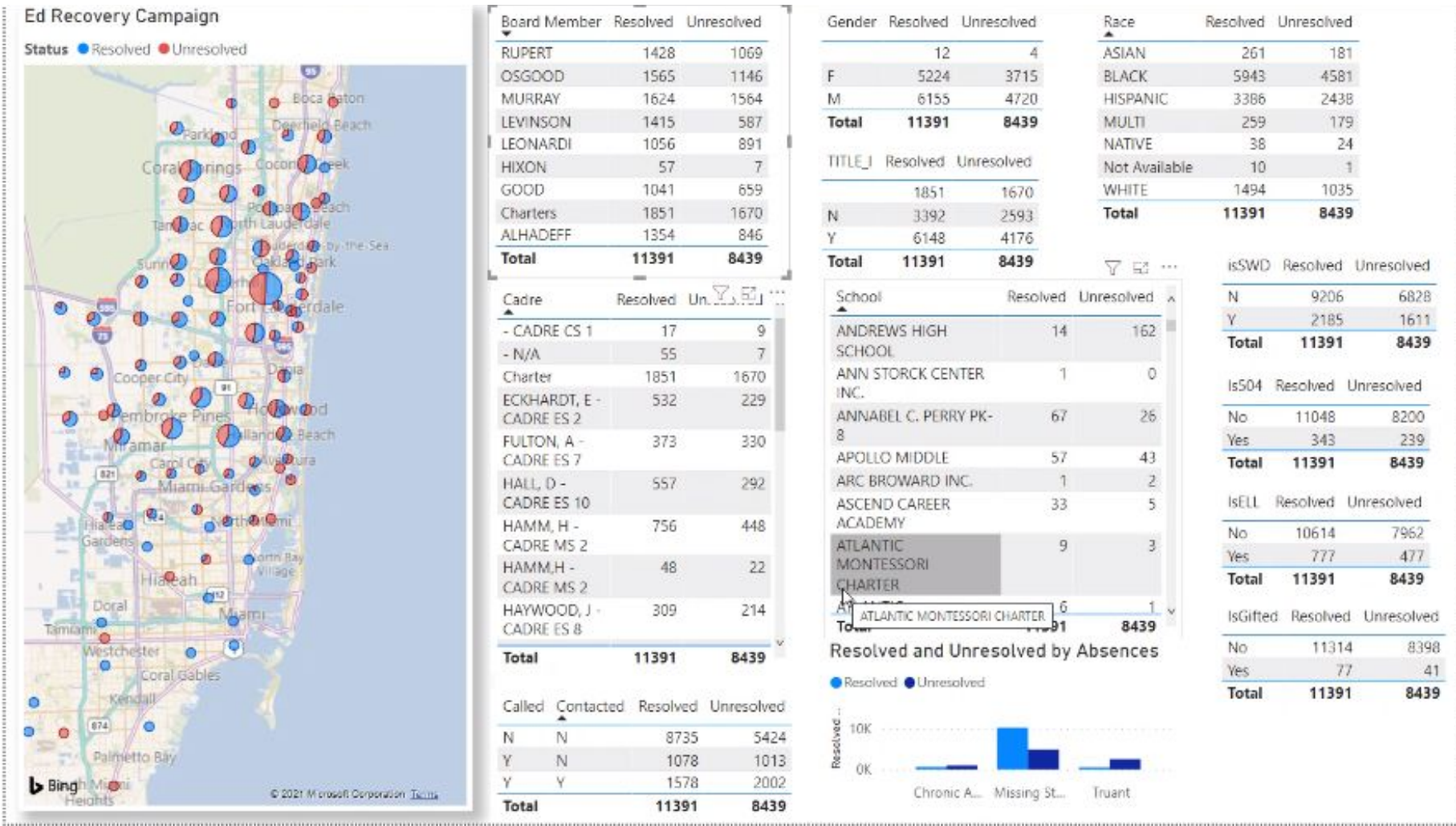
Student Reengagement Campaign

Combining Phonebanks with Door to Door Weekend of Action

Phone Campaign Totals as of 9/27/21		D2D Campaign Weekend of 9/25 & 9/26		Ed Recovery Campaign Total As of 9/27/21	
Total Attempts		Total Attempts		Total Attempts	
15476		8101		23577	
Number of Students CONTACTED	% Of Total Attempts	Number of Students CONTACTED	% Of Total Attempts	Number of Students CONTACTED	% Of Total Attempts
3379	22%	2685	33%	6064	26%
Number of Students contacted who indicated they wish to RETURN to an SBBC School	% Of Total Contacts	Number of Students contacted who indicated they wish to RETURN to an SBBC School	% Of Total Contacts	Number of Students contacted who indicated they wish to RETURN to an SBBC School	% Of Total Contacts
292	9%	189	7%	481	8%

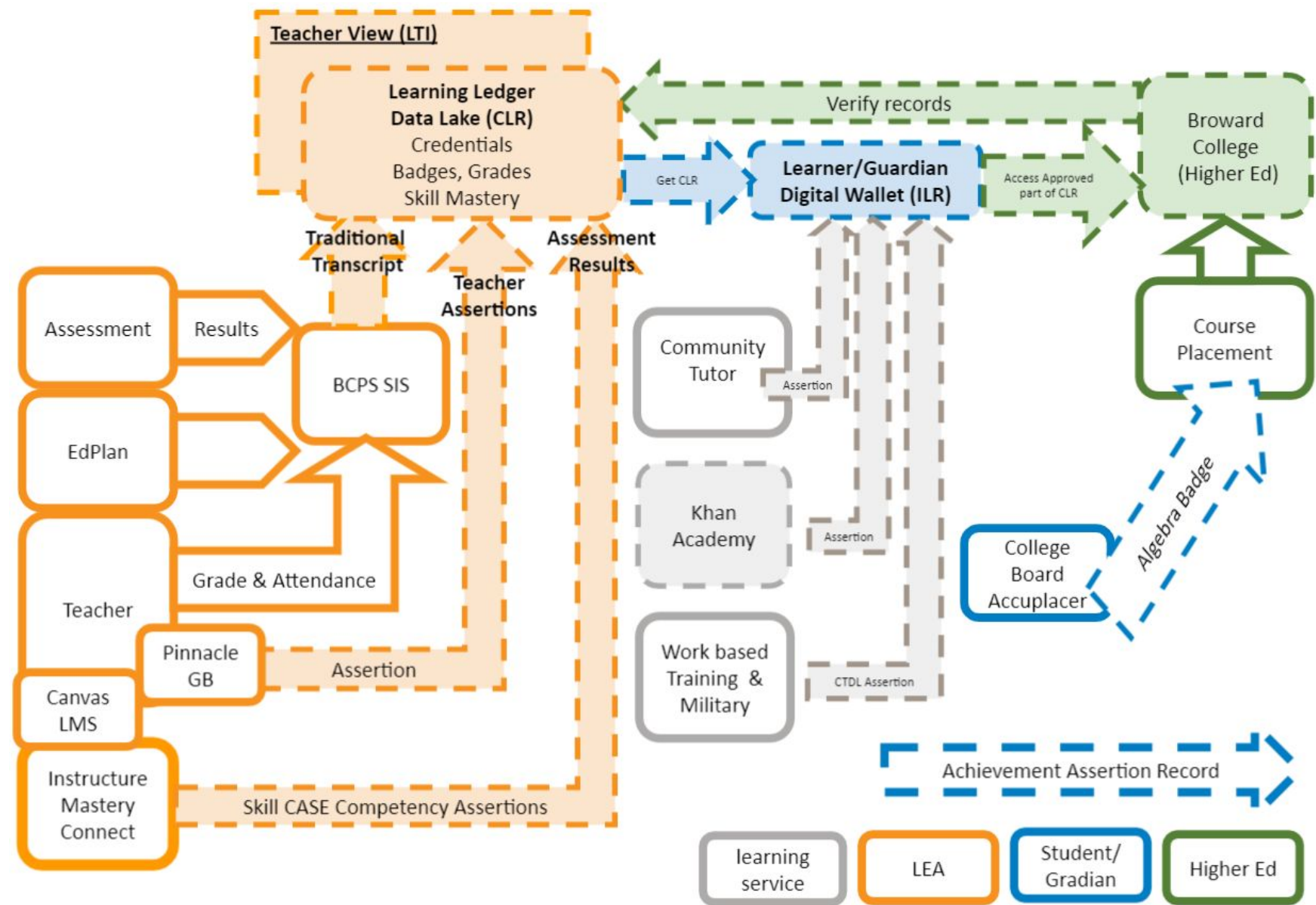
Broward Ed Recovery Dashboard

Phase I - Student Reengagement



CASE Study: Broward Equity Co-Lab

Comprehensive Ed Recovery Services



Solutions that empower districts to meet the diverse needs of students. Solutions that matter.

Public Consulting Group (PCG) works with districts across the country to bolster educational recovery efforts following the COVID-19 pandemic. Depicted below are some of the ways PCG helps educators to position all students for success in the 2021-2022 school year and beyond.



To learn more about PCG's efforts to support equitable educational recovery, inclusive of all students, contact **Naomi Szekeres** at NSzekeres@pcgus.com.



Building capacity of educators and leaders to engage diverse learners and deliver educational excellence.

Principal's Playbook

Courageous Conversations about Race

Equity Playbook

Meeting basic health and safety needs to ensure all students have a stable foundation for learning and growth.

PCG's Behavioral Threat Assessment (BTA) and Suicide Risk Assessment (SRA) Solutions

Identify and support students who may be a danger to themselves or others and mitigate risks through intervention processes.



EDPlan Health™

Provides school nurses with convenient, secure access to basic student health information and the ability to digitally document the provision of health services to students.



Providing efficient and effective specialized services to ensure all students have access to a quality education.

EDPlan™

Comprehensive, web-based case management platform for students with exceptional needs.



Student Education Plans and Accommodations (SEPA)

Technology interoperability that integrates student instructional data directly into a district's learning management system (e.g., Canvas) enabling educators to ensure lesson plans meet students' specific accommodation needs.



Combining technology and tutoring for personalized instruction to better support and showcase students' learning journeys.

Comprehensive Learner Records (CLRs)

Technology interoperability that enables district IT systems to interact with other platforms providing educators with specialized views of CLRs to inform personalized, competency-based learning and facilitate students' educational progress.



Accelerated Learning Services

Tutoring to help address students' academic and social-emotional learning (SEL) needs. PCG tutors also support student and family outreach to encourage re-engagement throughout the learning community.



Enabling meaningful engagement and educational recovery while bringing equity with excellence to education.

Ed Recovery Dashboard

Technology interoperability services that power an Ed Recovery Dashboard at the district, cadre, and school levels, to enable more personalized learning, support intensive tutoring, reduce chronic absences, and ensure academic progress.



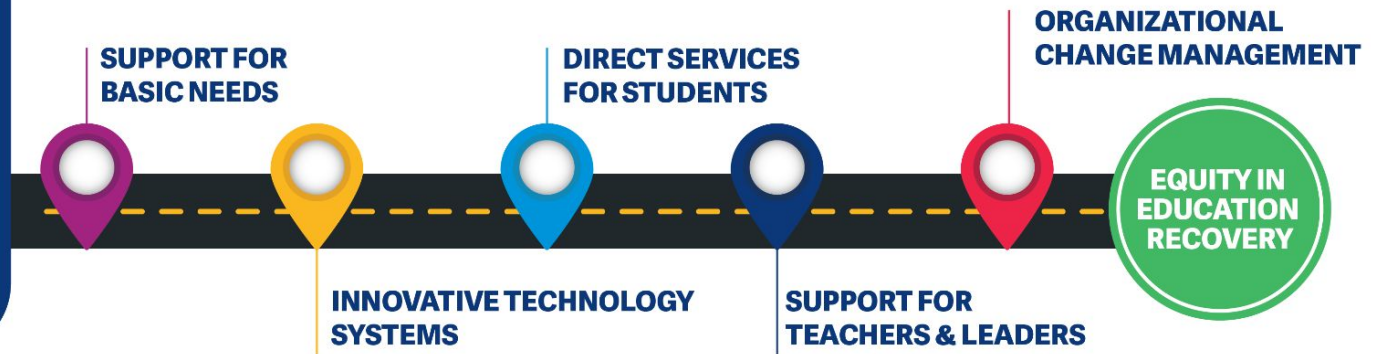
And so much more!

PCG offers a broad range of solutions designed to improve educational outcomes, meet the needs of diverse learners, advance equity and educational excellence, and position students (and educators!) for success.



Get on Track to Equitable Education Recovery

PCG is committed to helping our k-12 education partners nationwide navigate the diverse needs of students, COVID-19, learning loss, equity advancement, and more during the 2021-22 school year, and beyond.



LEGEND



Support for Basic Needs

- Student & Family Engagement
- COVID/Health/Mental Health Record Management
- Safety/Behavioral Threat Management



Innovative Technology Systems

- EDPlan™
- Data Interoperability Services
- Data Dashboards



Direct Services for Students

- TutorED™
- EPIC™ Afterschool & Summer Camp Programs
- Tutor Operations Hub



Support for Teachers & Leaders

- Custom Curriculum
- Mastery-Based Grading
- Professional Development & Coaching



Organizational Change Management

- Equity & Ed Recovery Operations Center
- Courageous Conversations About Race
- Special Education Consulting
- Project/Program Management



Services and supports aligned with federal ESSER funds

TutorOps Hub

WEBCON < TutorEd Main Search everywhere...

Search in navigation...

Application Home

My Tasks 1

Insights

Starts

Menu

Add Tutor

Bulk Load Tutors

Student Profiles

WEBCON < TutorEd Main Search everywhere...

Comprehension Eval X

Everywhere Text to search

ID	Name	Description
+ 0	N/A	Not Applicable
+ 1	Not Yet Developing	Student's response(s) is an attempt but answers incorrectly with little or no work. Or, has major errors, uses inappropriate strategies
+ 2	Developing	Student's response(s) is partially complete or uses a partially complete strategy, but work does not yet reflect a basic understanding. Or student answers correctly but does not show a strategy or work.
+ 3	Proficient	Student's response(s) demonstrates a basic understanding but does not demonstrate full mastery or understanding. May explain less completely, may include minor error in process but not of understanding.
+ 4	Mastery	Student's response(s) is complete with clear explanation, includes clear and simple diagram, if appropriate, shows understanding of mathematical ideas and processes, gives strong supporting arguments if required.
+ 5	Mastery Plus	Student's response(s) meets all characteristics of "Mastery", contains evidence of connection to other mathematical ideas or concepts or new context and may have evidence of deeper/extended conceptual understanding

TutorOps Hub

WEBCON < TutorEd Main Search everywhere...

Search in navigation...

- Application Home
- My Tasks 1
- Insights
- Starts
- Menu
- Add Tutor
- Bulk Load Tutors
- Student Profiles

During the Session, how would you describe the student's behavior? Please take into account any specific accommodations the student may need. Scale is 1: Unacceptable Behavior, 2: Some Unproductive Behavior, 3: Adequate Behavior for Progress, 4: Well Behaved 5: Well Behaved+

Unacceptable behavior ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 Well Behaved+

Standards / Skills *

Standard / Skill Reviewed	Description	Comprehension Eval*	Session Comments ⓘ *
LAFS.1.L.1.1.b X ✓ ≡	Use common, proper, and possessive nouns.	Mastery X ✓ ≡	
LAFS.1.L.1.1.c X ✓ ≡	Use singular and plural nouns with matching verbs in basic sentences (e.g., He hops; We hop).	✓ ≡	

WEBCON < TutorEd Main Search everywhere...

Comprehension Eval X

Everywhere ▾ Text to search 🔍

ID	Name	Description
+ 0	N/A	Not Applicable
+ 1	Not Yet Developing	Student's response(s) is an attempt but answers incorrectly with little or no work. Or, has major errors, uses inappropriate strategies
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CLR Achievement Assertions

A common conceptual model for IMS CLR, IEEE ILR, and W3C Edu

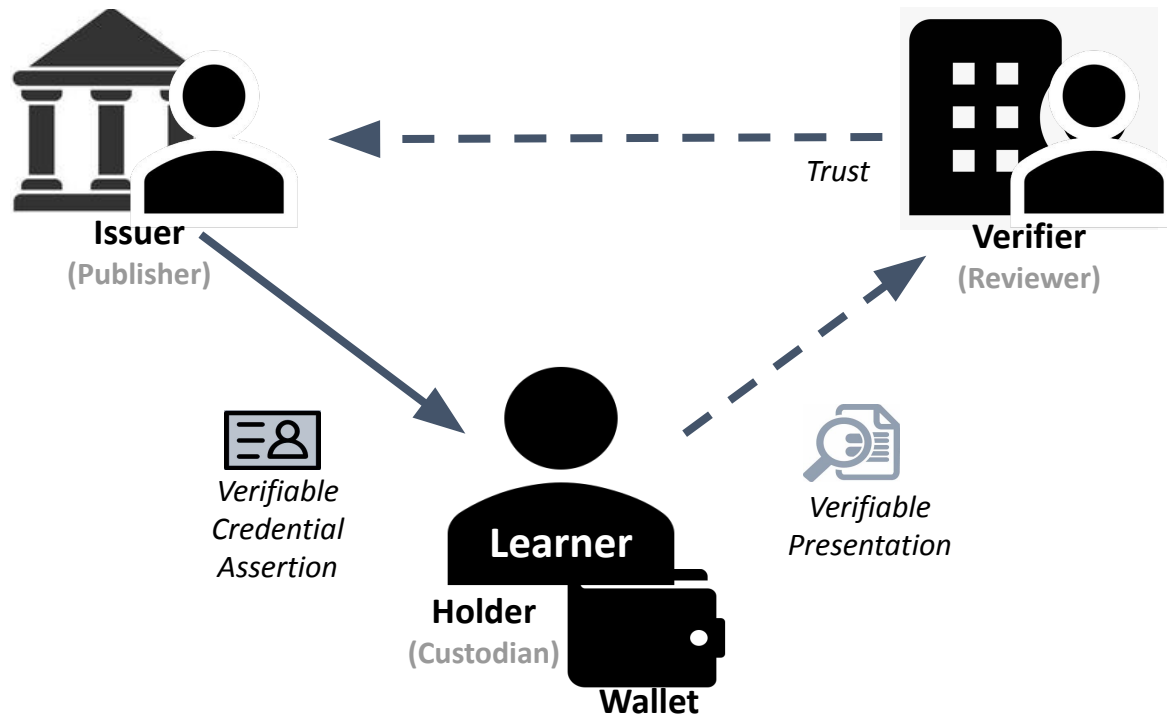
Learner Record Set	
Learner Record	
Assertion	Achievement
Learner (PII)	> CASE/RSD/ESCO Skill
Issuer	> CTDL Credential
Evidence/Time	> OB BadgeClass
Verification	Achievement Level
Verification	

I,	assert that	demonstrated	at	with
Issuer	Learner	Achievement	Level	Evidence

1. **Learner Record.** In a learner record, the core record is a distinct **assertion/claim** that could have **evidence** and/or an **achievement** to a **level** described in a **rubric**.
2. **Achievement (Description).** An achievement can be described as a shared record that can be set as a goal and/or accomplished by more than one learner and, therefore, be compared and exchanged. **Rubrics** can be used to define levels associated with the achievement definition (e.g. “approaches,” “meets,” “exceeds”).
3. **Assertion/claim.** The attestation made by an Issuer about a Learner regarding an Achievement. The Assertion may also include associated evidence, results, or other metadata regarding a specific Achievement.
4. **Evidence.** Information supporting the issuance of an assertion such as URL to an artifact produced by the Learner. Evidence can be curated into **portfolios** and used to generate **assertions**.
5. **Learner Record Sets.** Sets of achievement assertions can be grouped into immutable **transcripts** and/or can be curated into learner record sets.
6. **Context.** Learner records exist as linked data related to other learner records and sets and aligned with other relevant objects like CASE and CTDL.

The Internet of Education

Self-sovereign identity and access control at the scale of the Internet



Core Requirements:

- #1 Personal Data Control
- #2 Exchangeable Across Networks

Core Use Scenario:

*When a learner achieves an outcome, an **Issuer** asserts a cryptographically signed credential that can be held in any standard digital wallet app where the **Holder** can control verifiable presentation to a **Reviewer** in any jurisdiction without having the need for a data sharing agreement with the **Issuer**.*

A vision of the near future

- in which people's skills become machine-readable data
- that can be held and controlled from a digital wallet app
- and exchanged like currency
- for learning and employment opportunities
- on the open Internet
- the way goods and services are exchanged today.

