Creating and Cross-Walking Competencies Using Case and OpenSALT

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Public Consulting Group
Creating and Crosswalking Competencies Using CASE and OpenSALT

Leveraging IMS Global CASE and OpenSALT to solve significant challenges in developing meaningful pathways and portfolios

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Sr. Advisor and Solutions Architect
IMS Global CASE Co-chair
1. Introduction
2. What is IMS Global CASE?
3. What is OpenSALT?
4. What is a “Crosswalk” and why should you care?
5. Using OpenSALT and CASE to create a crosswalk between two similar frameworks
6. Developing competency pathways
Joshua Marks
Solution Architect
Sr. Advisor

- Open Source Project Director
  OpenSALT.org
- Co-Chair IMS Global CASE taskforce
- Contributing Member to many other IMS Specs
- LRMI Technical Working Group co-founder
- Founding CTO of Curriki.org
- Lots of other things
What is IMS Global and CASE?

**IMS Global**: Industry standards organization focused on learning systems and content interoperability

**CASE**: Competencies and Academic Standards Exchange

Graphic by: www.qi-partners.com
Competencies are at the Center

Standards-Aligned Instruction and Curriculum Design

Assessment and Performance Evaluation

‘Competencies’
● skills,
● knowledge,
● abilities,
● learning targets,
● expectations

Competency Frameworks

Personalized, Competency-Based Learning
IMS Global Releases CASE 1.0
Competency and Academic Standards Exchange

- Industry standard developed with participation of LEAs, SEAs, ed tech and content vendors
- Includes K-12, higher ed and corporate training stakeholders
- Data format and “API” for a “CASE provider” app
- Provides a way for systems and content to use the same “Tags”
- Enables “Crosswalking” between frameworks
The use of technology and technology-based applications in the classroom continues to grow increasing the need and importance of interoperability related standards and solutions. The IMS CASE standard and registry solution will help to fill a critical gap in the education technology ecosystem.”

—Brent Engelman, Director of Education Data & Information Systems, CCSSO.
IMS Global CASE Registry as a network of CASE servers

**CASE Registry Requirements**

1. CCSSO helps designated 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

**CASE Server Test Requirements**

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

Framework Management and Standards Alignment Tool

- Create and update Competency Frameworks and “crosswalks”
- PCG’s hosted service is CASE certified by IMS Global (GA, SBAC)
- Development Collaboration between PCG, ACT, School City and others
- PCG Provides both commercial support and customization/Integration of OpenSALT in addition to managed hosting
- Built to help organizations, publishers and systems vendors implement CASE

- https://opensalt.org
- https://opensalt.net
What is OpenSALT?

- Open Source (opensalt.org)
- CASE Provider and Consumer Certified
- Create and publish frameworks
- Create associations within and across frameworks
- Provide for multiple organizations and editors
Types of Competency Framework

• K-12 Learning Standards (Common Core, TEKS, etc.)
• Assessment blueprints and specifications
• College course and program requirements (Capella University, WGU, etc.)
• Military job classification and training requirements (DOD)
• Professional Certification Agencies (PMP, MS Certified, Bar Exam, Cosmetology, etc.)
• Corporate job classifications and levels (PCG Competencies)
Uses for CASE and OpenSALT

- Content management and aligning resources
- Assessment/performance review
- Job descriptions
- Candidate review
- Personal and professional development (personalized learning pathways)
- Certification and badging (awarding skill attainment)
- Organizational resource planning (What skills are needed?)
- Building communities of practices and connecting staff to mentors around competencies
What is a Crosswalk? Why?

- Connect job requirements and skills to educational goals
- Connect certifications and credentials across organizations
- Build skill and competency pathways from primary to secondary, post-secondary and though to career and workforce development
What is a “Competency Pathway”

3 kids of “Pathways”

1. Credential or “Badge” Pathway - You need a highschool diploma before you can start a BA program, and a BA before an MA

2. Learning Pathway - I want to teach this unit or skill before I teach that one

3. Competency Pathway - A student must master these skills before they can learn those (e.g. subtraction before long division)
Competencies connect instruction and assessment

- Content is aligned to competencies
- Learner profiles and growth are defined in terms of competencies
- Assessments determine proficiency levels in terms of competencies
- Instructional and credential pathways are connected set of leveled competencies (Elementary > Middle School > High School > AA > BA > MA > PhD)
I, claim that I possess [COMPETENCY] at [LEVEL] with [EVIDENCE] and [CONFIDENCE [0,1]] made at [TIMESTAMP] expiring at [TIMESTAMP].

*Competency Assertion model by EduWorks and CaSS
Questions? Comments?
CASE connects assessment and instruction
OpenSALT Demo Case Server

Grade 3 Mathematics Item Specification C1 TD

Example 1

Full Statement:
Example Item: Enter the number that belongs in the box on the number line.

Rubric: (1 point) The student enters the correct number for the pattern (e.g., 32).

Education Level: 03
Type: Example
PCG CMS Demo - CASE Clinet
Frameworks can include evaluation rubrics

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
<th>4 Points</th>
<th>3 Points</th>
<th>2 Points</th>
<th>1 Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has a plan for Investigation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The student turns in a written plan for investigation.</td>
<td>1</td>
<td>The plan is thorough</td>
<td>The plan is limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of Materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>The student manages materials responsibly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collects the Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>The student collects a sufficient number of data points to support the investigation and accurately records the data points.</td>
<td></td>
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</table>
Capella University and CASE

Why are Competencies, CBE, and CASE important to Capella?

*Capella serves mid-career working professionals who care most about learning relevant skills and competencies so that they can perform at the top of their progression.*

- Capella lives this philosophy in many ways through our curriculum, assessment practices, *backwards-design*, badging program, and our internal IT investments.
- **Explicit about the outcomes** and **learning objectives** within our Programs, Courses, and Assessments
- Capella has **had to build proprietary software and tools to manage our CBE infrastructure** including a curriculum authoring system, a rubric application, and a competency map.
- Capella is not new to Competency-based education (CBE) and the **data structures required for higher ed CBE are supported by the CASE specification**.
- Capella’s strategic plan is to **ensure our proprietary CBE tools align to the CASE specification**.
<table>
<thead>
<tr>
<th>CRITERION</th>
<th>NON-PERFORMANCE</th>
<th>BASIC</th>
<th>PROFICIENT</th>
<th>DISTINGUISHED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRITERION 1</strong> Evaluate how a unit-level customer relationship management system can integrate with other data sources to support the core business processes of a multinational organization.</td>
<td>Does not analyze how a unit-level customer relationship management system can integrate with other data sources to support the core business processes of a multinational organization.</td>
<td>Analyzes but does not evaluate how a unit-level customer relationship management system can integrate with other data sources to support the core business processes of a multinational organization.</td>
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<tr>
<td><strong>CRITERION 2</strong> Evaluate how a unit-level business process management system can integrate with other data sources to support the core business processes of a multinational organization.</td>
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<tr>
<td><strong>CRITERION 3</strong> Evaluate the potential risks or challenges associated with the use of integrated or consolidated data sources to support the core business processes of a multinational organization.</td>
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 Competency Map

ISTM-FP5025: Analytics Data Mgmt Know Mgmt

COMPETENCY 2
Integrate business intelligence and knowledge management strategies to inform decision-making.

Current Status: Distinguished
(7 out of 7 criteria completed)

Criterion - Complete: Distinguished
Evaluate how a unit-level customer relationship management system can integrate with other data sources to support the core business processes of a multinational organization.

u044a: Integrating Data

Criterion - Complete: Distinguished
Compare and contrast the logical and physical application and data components of a technological architecture.

u09a: Merged Environment

Criterion - Complete: Distinguished
Evaluate how a unit-level business process management system can integrate with other data sources to support the core business processes of a multinational organization.

u044a: Integrating Data

Criterion - Complete: Distinguished
Analyze the potential benefits and challenges associated with implementing a selected architectural alternative.

u09a: Merged Environment

Criterion - Complete: Distinguished
Communicate in a manner that is professional and consistent with expectations.

u044a: Merged Environment

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OpenSALT and Competency Framework Alignments

There are 67 Lominger competencies. These abilities and skills serve to measure a person’s effectiveness in business.
LTI Resource Search leveraging CASE

- Uses CASE URIs to enable searching for content about any skill across multiple repositories
- Demonstrated working integrations at IMS LILI
- Final candidate specification ready for validation tests to be complete
- Supported by ACT, Knowvation, Safari MONTAGE, Instructure, D2L, Its Learning, School City, etc.
- First new spec of a set of specs to directly integrate CASE.
  - One Roster,
  - QTI,
  - Caliper,
  - LTI 1.3,
  - Open Badges 2.0,
  - and others are either directly integrating or profiling as best practices the use of case URIs to identify alignments (CC and TCC etc.)
Credential Registry

Credential Registry/Engine

- Lumina Foundation Funding
- Searchable index of all credentials
- Includes “Credential Transparency Description Language” (CTDL)
- Credentials defined in part by their alignment to competencies
- Cross all levels: Primary, Secondary, Military, and Corporate/Professional
- Participation by all relevant organizations: PESC, HR Open Standard, MedBiquitous, IMS Global, Dublin Core, IEEE, ADL, and others
- OpenSALT is the tool used for editing, maintaining and publishing competencies into the CTDL
Work Group 1 Stakeholder Use Cases

**Employer Use Cases**
- Signaling
- Recruitment
- Application, Screening and Verification
- On-Boarding and Development
- Performance Analytics

**Learner (Student & Worker) Use Cases**
- Signaling
- Career and Education Opportunity Search and Discovery
- Application, Screening, and Verification
- Participation and Transitioning
- Performance Analytics

**Education and Training Provider Use Cases**
- Signaling
- Search and Discovery
- Learner Services
- Aligning Programs/Credentials and Learner Records
- Performance Analytics
Competency Development & Translation Challenge

Assessing fit of competencies within and between employers, education and training providers / credentialing organizations and learners.

- Course Catalogs
- Websites
- Assessment Blueprints and Handbooks
- Badging Systems
- Student Information Systems
- ...

Learners (Students & Workers)

- Resumes
- Profiles
- Portfolios
- Learner Records
- ...

Employers

- Job Profiles, Descriptions and Listings
- Training and Assessments
- Credentials Issued
- Performance Information
- ...

Education/Training Providers and other Credentialing Organizations

Strength of Fit
CASE Logical Model

CF Doc, CF Item, CF Association and CF Rubric