CREDENTIAL INTEROPERABILITY

FY 2020 Education Stabilization Fund – Reimagine Workforce Preparation (ESF-RWP) Grants Program

July 16, 2020 | Sharon Leu
The webinar will begin at 2:00 pm ET

Information on joining the teleconference can be found under the phone icon in the upper middle of the screen. Use your computer audio or have Adobe Dial-out to you directly to participate by voice:

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To cut down on background noise, we have placed you on mute upon entry into the meeting

A copy of this presentation and a link to the recording will available on the PTAC website at https://studentprivacy.ed.gov/
CREDENTIAL INTEROPERABILITY

FY 2020 Education Stabilization Fund – Reimagine Workforce Preparation (ESF-RWP) Grants Program
Objectives

- ESF-RWP Program Requirement and Definitions
- Credential Interoperability
- Resources
- Questions and Answers
PROGRAM REQUIREMENTS

Education Stabilization Fund – Reimagine Workforce Preparation (ESF-RWP) Grant Program
Application and Information

Federal Register Notice Inviting Applications (NIA):

ESF-RWP Application Package Instructions:

Pre-applicant Webinar:
Background

The Department of Education wishes to ensure that individuals, employers, educators and training providers have access to the most complete, current and beneficial information about providers, programs and credentials supported with these grant funds.
Absolute Priority 1

(a) Creating, developing, implementing, replicating, or taking to scale short-term educational programs and training courses or programs, and/or career pathways programs, including those focused on facilitating and strengthening entrepreneurship and small business ownership

(b) Funding the creation, development, implementation, replication, or scaling of industry sector-based education and training models and programs
Absolute Priority 1 (cont.)

Projects under Absolute Priority 1(a) and 1(b) may include apprenticeships and other work-based learning programs and **must provide individuals the opportunity to earn badges, certifications, micro-credentials, licenses, or other credentials** that employers affirmatively signal will contribute to qualifying a candidate for employment or promotion in an in-demand industry sector or occupation (as defined in this notice).
Program Requirement

Grantees must make information on all credentials (including badges, certificates, certifications, licenses, and degrees of all levels and types) and competencies (knowledge, skills and abilities) achieved as a result of funding under this program publicly accessible through the use of linked open data formats that support full transparency and interoperability.

Such information must include the industry sector for or by which the credential was developed, the entities involved in the development of the credential, the competencies or skills assessed in awarding the credential, the form of assessment used to verify an individual's eligibility to be awarded the credential, and the body engaged in overseeing the awarding of such credentials.
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CREDENTIAL INTEROPERABILITY

Transparency and Interoperability of Credentials and Competencies
Lifelong Learning and Employment

Image by mohamed Hassan from Pixabay
Lifelong Learning and Employment

Image by mohamed Hassan from Pixabay
<table>
<thead>
<tr>
<th>Data Collected</th>
<th>Where It's Stored</th>
<th>Who Has Control</th>
<th>Who Has Access</th>
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</thead>
<tbody>
<tr>
<td>Grades, Attendance, Assessments, Diploma</td>
<td>Student Information System (SIS)</td>
<td>School District</td>
<td>Parents, Foundations, Programs, Researchers</td>
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<tr>
<td>Employment &amp; Wage Record, Resume</td>
<td>HRIS System Payroll System Online Profile</td>
<td>Employer</td>
<td>Future Employers, Creditors</td>
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<td>Student Transcript</td>
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<td>Institution of Higher Education</td>
<td>Student, Foundations, Programs, Researchers</td>
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<tr>
<td>Employment &amp; Wage Record Skills &amp; Competencies</td>
<td>HRIS System Payroll System Online Profile</td>
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</tr>
<tr>
<td>State UI Case Management System</td>
<td>State UI Database &amp; Workforce Case Management System</td>
<td>State Agency &amp; Local Workforce Agency</td>
<td>State Programs, Training Programs, Researchers</td>
</tr>
<tr>
<td>Student Record</td>
<td>SIS System Online Profile</td>
<td>Training Program</td>
<td>(Parents) State Agencies, Foundations, Researchers</td>
</tr>
<tr>
<td>Employment &amp; Wage Record Skills &amp; Competencies</td>
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<td>Employer</td>
<td>Employee, Future Employers, Creditors</td>
</tr>
</tbody>
</table>
Credential Ecosystem

738,438 Unique Credentials Offered

➔ 370,020 by postsecondary institutions
➔ 7,132 by MOOC providers
➔ 315,067 by non-academic organizations
➔ 46,209 by secondary schools

Source:
Counting US Postsecondary and Secondary Credentials

Society of Human Resource Management’s 2016 Human Capital Benchmarking Survey
What makes a credential interoperable?
Program Requirement

Grantees must make information on all credentials (including badges, certificates, certifications, licenses, and degrees of all levels and types) and competencies (knowledge, skills and abilities) achieved as a result of funding under this program publicly accessible through the use of linked open data formats that support full transparency and interoperability.

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Program Requirement

The Department requires that information about all credentials (including but not limited to badges, certificates, certifications, licenses, and degrees of all levels and types) and competencies (knowledge, skills and abilities) developed or delivered through the use of these Federal funds be made publicly accessible through the use of linked open data formats that support full transparency and interoperability, such as through the use of credential transparency description language specifications.
Concepts

- Publicly Accessible
- Linked Open Data Format
- Transparent
- Interoperable
- Credential Transparency Description Language (CTDL)
Publicly Accessible

Accessible: Open data are made available in convenient, modifiable, and open formats that can be retrieved, downloaded, indexed, and searched. Formats should be machine-readable (i.e., data are reasonably structured to allow automated processing). Open data structures do not discriminate against any person or group of persons and should be made available to the widest range of users for the widest range of purposes, often by providing the data in multiple formats for consumption. To the extent permitted by law, these formats should be non-proprietary, publicly available, and no restrictions should be placed upon their use.”

Reference: https://policy.cio.gov/open-data/
Linked Open Data Format

Structured data is machine-readable and used by search engines to understand the content of web pages.

Linked Data is a type of structured data that links between systems via the Web. When data is both structured and linked, it becomes a powerful tool that search engines and other systems can leverage.

Linked Data is at the foundation of the Semantic Web, which is all about: (a) making meaningful links between data points understandable to humans and machines alike; and (b) providing the means for inferring new data from existing data.

Reference: https://policy.cio.gov/open-data/
Linked Open Data Format

Open Data is data that is both (1) Technically open: available in a machine-readable standard format, which means it can be retrieved and meaningfully processed by a computer application; and (2) Legally open: explicitly licensed in a way that permits commercial and non-commercial use and re-use without restrictions.

License Examples:

- Open Data Commons Open Database License (ODbL)
- Open Data Commons Attribution License
- Open Data Commons Public Domain Dedication and License (PDDL)
Linked Open Data Format

Data Format Examples:

- JSON-LD (https://www.w3.org/TR/json-ld11/)
- Microdata (https://www.w3.org/TR/microdata/)
- RDFa (https://www.w3.org/TR/rdfa-primer/)

Resource:
https://developers.google.com/search/docs/guides/intro-structured-data
Transparent

Clearly defined, enables comparison, and is based on shared open standards, common language/descriptions, and skills ontologies/frameworks. Provides contextual information for determining relevance and skills mastered.

Resource:
Interoperable

Uses open standards and common ontologies/frameworks to enable data to be machine readable, exchangeable, and actionable across technology systems and, when appropriate, on the Web. Supports combinations of data from multiple sources. Enables human interoperability and can be understood by people in different occupations and industries from diverse backgrounds.

Resource:
The Credential Engine’s Credential Transparency Description Language (CTDL) is a set of terms and a logical grammar for using them, that is, a “schema” used to describe information regarding Credentials, Competency Frameworks, and Quality Assurance.

The CTDL is structured using RDF principles, allowing diverse systems to communicate about Credentials even if those systems use different schemas internally.
Santa Rosa College offers a Certificate in Dental Assisting that requires completion of their Applied Dental Science program and requires specific competencies and is accredited by the American Dental Association.
Santa Rosa College offers a **Certificate in Dental Assisting** that requires completion of their Applied Dental Science program and requires specific competencies and is accredited by the American Dental Association.
Required Data Elements

- Industry Sector
- Entities Developing Credentials
- Competencies/Skills Assessed
- Assessment
- Body Overseeing Award of Credential
### Example - CNAA from Credentialfinder.org

#### Requirements

**Certified Medical Administrative Assistant (CMAA)**

**National Healthcareer Association (NHA)**

**Assessments**

To be eligible to sit for an NHA exam (other than the ExCPT Pharmacy Technician) and receive certification, each candidate must satisfy Steps 1-3 below:

1. **Step 1**: Possess a high school diploma or the equivalent, such as a General Education Development (GED) test or other equivalency test recognized by the candidate's state of residence, or diploma and official transcript reflecting equivalent education as evaluated by the American Association of Collegiate Registrars and Admissions Officers for secondary education (if documents are not in English, a translation into English from a translation service approved in the United States for legal or governmental documents must be available upon request).

2. **Step 2**: Successfully complete one of the following pathways:
   - **PATHWAY 1: TRAINING PROGRAM**: Within the past five (5) years.
   - a. Successfully complete, a training program in the health field covered by the NHA certification exam offered by an accredited or state-recognized institution or provider; or
   - b. Successfully complete, an apprenticeship program that is registered pursuant to the guidelines of the U.S. Department of Labor; or c. Successfully complete, formal medical services training offered by any branch of the U.S. Military Training.

3. **Step 3**: If certifying as a Phlebotomy Technician or an EKG Technician, such Candidates must also complete the Additional Program-specific Eligibility Requirements, described below, prior to sitting for the exam.

**Additional Program-specific Eligibility Requirements**

- **Phlebotomy Technician Certification (CPT)**: Each candidate for the CPT certification must provide evidence that he/she has successfully performed a minimum of thirty (30) venipunctures and ten (10) capillary sticks on live individuals.
- **EKG Technician Certification (CET)**: Each candidate for the CET certification must provide evidence that he/she has successfully performed a minimum of ten (10) EKGs on live individuals.

**Conditions**

**Description:**

Certification Eligibility

To be eligible to sit for an NHA exam (other than the ExCPT Pharmacy Technician) and receive certification, each candidate must satisfy Steps 1-3 below:

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**Audience Level**

<table>
<thead>
<tr>
<th>Secondary School or Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
## Example - CNAA from Credentialfinder.org

### 203 Assesses 203 Competences

- Check on callers with extended hold times.
- D. Create correspondences
  - Knowledge of templates
  - Knowledge of word processing
  - Knowledge of different types of letters
  - Knowledge of different types of correspondences
  - Create letters.
  - Use proper greetings and salutations.
  - Apply proper postage.
  - Obtain required signatures (e.g., who should sign the correspondence?).

- E. Demonstrate basic computer skills
  - Knowledge of e-mail system (e.g., Microsoft Outlook)
  - Knowledge of word processing (e.g., Microsoft Word)
  - Knowledge of spreadsheets (e.g., Microsoft Excel)
  - Knowledge of Internet (e.g., social media, web searching)
  - Use of hardware (e.g., copiers, fax machines, scanners)
  - Basic HIPAA regulations for the use of the computer
  - Skills at computer software

- 7. Basic Medical Terminology
  - A. Use medical terminology to communicate with patients and physicians
    - Basic knowledge of pronunciation
    - Basic knowledge of spelling
    - Basic knowledge of the meaning of terms
  - B. Recognize abbreviations and acronyms used to complete administrative duties
    - Identify the meaning of abbreviations and acronyms (e.g., Hx, Pt, H&P, Dx, SOAP, HIPAA, CC, Rx, PHI, CDC, AMA, HMO, PPO).
    - Use of abbreviations and acronyms to complete basic administrative duties
  - C. Use word parts (i.e., prefixes, roots, suffixes) to define medical terminology
    - Basic knowledge of prefixes (e.g., a-, an-, pre-, post-)
    - Basic knowledge of roots (e.g., carbo-, vasc/o, gaste/o, nephri/o, hepato/o)
    - Basic knowledge of suffixes (e.g., -logy, -itis, -osis, -pathy, -ist, -graph)
<table>
<thead>
<tr>
<th><strong>NHA Certified Medical Administrative Assistant (CMAA)</strong></th>
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**Last Downloaded:** Apr 23, 2020 11:30 AM
CTDL Resources

Credential Engine is a non-profit organization that develops and maintains the Credential Transparency Description Language (CTDL) and scales and maintains a web-based Credential Registry that collects, connects, and maintains up-to-date credentialing data.

Resources:
- https://credentialengine.org
- https://credreg.net/quickstart/ilwrguide
Examples

Formats that support full transparency and interoperability of badges, certifications, micro-credentials, licenses, and others:

- W3C Verifiable Credentials Data Model https://www.w3.org/TR/vc-data-model
- Open Badge 2.0 Specification
  https://www.imsglobal.org/sites/default/files/Badges/OBv2p0Final/index.html
- Comprehensive Learner Record Specification
  https://www.imsglobal.org/activity/comprehensive-learner-record
Examples

Data on industry sector, credential issuers/verifiers, competencies/skills, assessment

- US Department of Labor, Standard Occupational Classification
  https://www.bls.gov/soc/home.htm
- US Department of Labor, O*NET https://www.onetonline.org/
- US Department of Labor, Competency Model Clearinghouse,
  https://www.careeronestop.org/CompetencyModel/
Examples

Data on industry sector, credential issuers/verifiers, competencies/skills, assessment (cont’d)

- EMSI Open Skills Library, https://skills.emsidata.com/
- HR Open Standards, https://hropenstandards.org/
RESOURCES

Interoperability and the “Learning and Employment Record”
White Paper on Interoperable Learning Records

AWPAB Data Transparency Working Group

Interoperable Learning Records Landscape Inventory

AWPAB Data Transparency Working Group

T3 Innovation Network

Learning and Employment Record (LER) Hub

https://lerhub.org/
QUESTIONS AND ANSWERS

ESF-RWP@ed.gov

@OfficeofEdTech

medium.com/@OfficeofEdTech
Does the requirement to use linked, open data formats prevent me from partnering with proprietary credential providers?
When should we start thinking about this program requirement? Can we focus on course development first, and then worry about meeting this requirement after we have released the training program?
What if we are developing credentials in an industry/occupation where there isn’t a developed framework (ie: NICE)?
What if we are developing credentials that contain proprietary information, such as about the assessment or the competencies?
END