Vetting Subject Matter Experts in Workforce Training Development of Standards, Curriculum, and Assessments

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Purpose of this whitepaper

This paper provides rationale and resources for recruiting and vetting qualified Subject Matter Experts (SMEs). The following sections provide a structure and support for secondary programs awarding postsecondary credit, postsecondary institutions, industry associations, other stakeholders, and apprenticeship programs to use in recruiting, vetting, and requiring the use of qualified Subject Matter Experts (SMEs) to develop standards, curricula, and assessments.   There currently are some standards and curriculum that educational institutions, non-profit organizations and others have produced without utilizing qualified and vetted subject matter experts. This structure could be used to determine the efficacy of those program standards and curriculum products to determine whether they should be revised or replaced. The final page of this report provides several background documents on Industry-based Standards.

Industry-Recognized Standards

Today's industry workers require high-quality training that enables them to produce superior products and deliver competent services in a competitive environment. This requires that students, apprentices and workers be prepared with knowledge, skills, and abilities that meet industry recognized standards. Students, apprentices, and workers have a right to expect value-added quality training benchmarked to relevant industry recognized standards, so they are prepared to work safely and productively in business and industry.

Whether standards are prescriptive and performance standards, industry-wide technical standards, industry skill-specific standards, a certification, or a product-specific standard, key to identifying valid knowledge, skills, and abilities workers need, depends upon utilizing qualified subject matter experts (SMEs) in the development of standards, curriculum, and assessments. Recruiting qualified subject matter experts is foundational when education and training entities, industry associations, other stakeholders, or apprenticeship programs commit to developing industry standards, curriculum and assessments. Workforce education and training providers can adopt existing approved industry standards or use qualified SMEs to develop industry standards.

Examples of Requirements for Industry-Recognized Standards

U.S. workforce development programs consistently emphasize the importance of training that prepares workers with the skills, knowledge and abilities that meet industry-recognized standards.

Perkins V "references the Workforce Innovation and Opportunity Act (WIOA) term "recognized postsecondary credential," which includes a spectrum of credentials, but limits the list for the purposes of this law to industry-recognized credentials, certificates or associate degrees to ensure funding remains focused on sub-baccalaureate credentials." (Ref: Advance CTE Perkins Side-by-Side; Pg 6. https://cte.careertech.org/sites/default/files/PerkinsV_Side-by-Side_Draft_Updated101618.pdf). Perkins V also includes requirements for training to industry standards as well as for educators providing that training to stay current with industry standards

Workforce Innovation and Opportunity Act's (WIOA) purpose is to provide access to high-quality training. WIOA helps job seekers acquire industry-recognized credentials for in-demand jobs by emphasizing and funding training that leads to industry-recognized post-secondary credentials. (ref: DOL/ETA WIOA Overview - https://www.dol.gov/agencies/eta/wioa/about).

Registered Apprenticeship - 29 Code of Federal Regulation, Part 29; § 29.4. Criteria for appriceable occupations states…An apprenticeable occupation is one which is specified by industry and which must:

(a) Involve skills that are customarily learned in a practical way through a structured, systematic program of on-the-job supervised learning;

(b) Be clearly identified and commonly recognized throughout an industry;

(c) Involve the progressive attainment of manual, mechanical or technical skills and knowledge which, in accordance with the industry standard for the occupation, would require the completion of at least 2,000 hours of on-the-job learning to attain; and

(d) Require related instruction to supplement the on-the-job learning.

29 Code of Federal Regulation, Part 29; §29.5Standards of apprenticeship states...An apprenticeship program, to be eligible for approval and registration by a Registration Agency, must conform to the following standards:

(2) The term of apprenticeship, which for an individual apprentice may be measured either through the completion of the industry standard for on-the-job learning (at least 2,000 hours) (time-based approach), the attainment of competency (competency-based approach), or a blend of the time-based and competency-based approaches (hybrid approach). (ref: https://www.govinfo.gov/content/pkg/CFR-2019-title29-vol1/xml/CFR-2019-title29-vol1-part29.xml).

Industry-Recognized Apprenticeship Program – The DOL states in its IRAP Regulations: "Paragraph (b) of § 29.20 in the final rule defines IRAPs as high-quality apprenticeship programs that are recognized by an SRE, wherein an individual obtains workplace-relevant knowledge and progressively advancing skills, that include a paid-work component and an educational or instructional component, and that result in an industry-recognized credential. Under § 29.20(b), an IRAP is developed or delivered by entities such as those outlined in § 29.20(a)."

IRAP Training Plan—§ 29.22(A)(4)(II) - Paragraph (a)(4)(ii) of § 29.22 states that a program must have a written training plan, consistent with its SRE's requirements and standards as developed pursuant to the process set forth in § 29.21(b)(1). The written training plan must detail the program's structured work experiences and appropriate related instruction, be designed so that apprentices demonstrate competency and earn credential(s), and provide apprentices progressively advancing industry-essential skills. (Ref: Federal Register 85 FR 14294: https://www.federalregister.gov/documents/2020/03/11/2020-03605/apprenticeship-programs-labor-standards-for-registration-amendment-of-regulations).

This USDOL recent effort to create a parallel non-registered apprenticeship program requires that approved Standards Recognition Entities (SREs) evaluate and recognize that an Industry-Recognized Apprenticeship Programs (IRAP) will train apprentices to recognized industry standards. While this author doesn't agree with the need to establish a parallel unregistered apprenticeship pathway, this never-the-less underscores the need to establish a structured process for an individual to apply, be vetted and approved as a Subject Matter Expert.

Definition of an SME

"Subject matter expert" is a person with direct knowledge of what is done in the job, what knowledge, skills, abilities and other characteristics (KSAOs) are required, and the general background of persons who are able to do the job successfully. These may include those currently doing the job, recent incumbents, those who supervise others doing the job, and other acknowledged job experts. Rose v. Shinseki, 2009 U.S. Dist. LEXIS 89656 (S.D. Tex. Sept. 29, 2009) Ref: https://definitions.uslegal.com/s/subject-matter-expert/.

An SME will have academic and technical knowledge, and job-specific skills grounded in industry-recognized occupational experience that qualifies that individual at a high level of expertise and excellence in performing a specialized job, task, or skill.

Role of the SME

The SME is the direct connection between identifying the skillset that workers need in order to work safely and productively in a job/occupation in industry, and the curriculum that is developed to train individuals for that job/occupation. Whether developed by a technical publisher, industry association, research organization, educational establishment, community college, technical school, or apprenticeship program, the validity and authenticity of resulting curriculum will not be credible if it hasn't been developed using qualified SMEs. SMEs provide the relevant, accurate, and up-to-date information that matches education, training, and workforce needs. Common Instructional Design processes (examples include: Job Task Analysis or Task Analysis, and Developing a Curriculum - DACUM) are dependent upon identifying and employing qualified SMEs.

Match SME occupation to the project

Recruiting an SME requires utilizing sound methodology to identify the occupational focus. Several linked federal systems within the U.S. Departments of Labor (USDOL) and Education (USDOE) can be used to identify the occupational focus for the project. The USDOL Bureau of Labor Statistics (BLS) maintains the occupational classification system. BLS states: "The 2018 Standard Occupational Classification (SOC) system is a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of 867 detailed occupations according to their occupational definition. To facilitate classification, detailed occupations are combined to form 459 broad occupations, 98 minor groups, and 23 major groups." (Ref: https://www.bls.gov/soc/). The 23 major occupational groups contain a listing of all occupations within each of the major groups. (Ref: https://www.bls.gov/soc/2018/major_groups.htm). SOC numbers can be used to locate specific occupational information through the USDOL Employment and Training Administration (ETA) Occupational Information Network (O*Net). Using a selected SOC, O*Net's occupational search engine leads to an information structure that defines the key features of the selected occupation through a standardized, measurable set of variables, called "descriptors." (Ref: https://www.onetonline.org/find/). O*Net also maintains crosswalks that can be used to locate Classifications of Instructional Programs (USDOE), RAIPDS codes - Registered Apprenticeship Partners Information Data System (USDOL; ETA; Office of Apprenticeship), (Ref: https://www.onetonline.org/crosswalk/).

Match SME skillset to the project

A general description should explain the initiative and context, goals and objectives, and people and organizations involved in the project. A SME statement of work will describe SME duties and responsibilities, explain specific work an SME must be qualified to perform, describe the outcomes that SME's will produce, and estimate the time involved. Given the specialization that is inherent in today's industries, it's sometimes a challenge to identify and recruit qualified SMEs. Identifying specific qualifications is important.

Identify qualifications to be an SME

–   Education and training appropriate for SME to be considered at a high level of expertise for the job or task.
–   Possess competent interpersonal skills and be a capable team member.
–   Hold industry-recognized degrees, credentials, and certification(s) in the area of expertise.
–   Have a minimum 8 years industry experience at a journeyworker level.
–   Have a minimum 5 years industry experience at a journeyworker level, directly related to the subject-matter being developed.
–   Have a minimum 5 years recency of experience directly related to the subject-matter being developed.
–   Be capable of contributing core content and material for item writing.
–   Be able to review and utilize source materials, standards, reference items, and supplemental resources.
–   Be capable of contributing core content, material, and/or assessments for industry standards.
–   Be capable of effectively communicating and helping organize academic and technical knowledge in a format that is conducive to curriculum production.
–   Have the time necessary to meet the commitment required. Meet all agreed-upon turnaround times for deliverables and deliverable reviews.

Applying to be an SME (Sample)

Following is information on a project that we hope you will consider participating in. If, after reviewing the project information, you meet the expectations within this document, please consider becoming an SME by completing the application on the following page.

Project

Note: Project Description, Products-Deliverables and Work Breakdown Structure should be modified to accommodate the project.

General Information

Project Name	Entity in Charge	Contact Person

Author	Date	Organization Name

Phone Number	E-Mail

General Project Description and Expectations of the Project.

Occupational Classification System(s) numbers: SOC; RAIPS; CIP.

SME Statement of Work – Detailed description of duties and responsibilities, specific work, deliverables, and estimate of time involved.

Products-Deliverables (To be listed and numbered as project framework requires)	Work Breakdown Structure (WBS) (Activities, Task, or Sub-Task)	Start Date	End Date
1.1 (Note: modify numbering as needed)	1.1.1 (Note: modify numbering as needed)		
	1.1.2		
	1.1.3		
1.2	1.2.1		
	1.2.2		
2.1	2.1.1		
	2.1.2		

Business Terms / Conditions

SMEs should complete an approved application that should be a part of the data system. Following is an example:

SUBJECT MATTER EXPERT (SME) QUALIFICATION APPLICATION

Name:	**Work #**:
Email:	**Subject(s) of Interest**:
Employer:	**Classification**:

SME, Representing: ☐ Apprenticeship ☐ Education ☐ Industry Association ☐ Apprenticeship ☐ Employer ☐ Other	**Please identify the entity**:

INDUSTRY EXPERIENCE

Please explain how you have used your education, training, knowledge, skills, abilities in applications similar to what is asked of an SME in this project.

Please provide detailed information concerning your experience, which directly relates to the subject matter of the program/course being developed or modified. Please attach additional sheets, if necessary.

EDUCATION/TRAINING EXPERIENCE

Please explain how you have used your education, training, knowledge, skills, abilities in any education and training applications similar to what is asked of an SME in this project.

Please list industry-recognized degrees, credentials, and certification(s) in the area of expertise:

ADDITIONAL QUALIFYING EXPERIENCE

Specialized Training	

PLEASE ATTACH RESUME AND ANY SUPERVISORY REFERENCES ALONG WITH YOUR APPLICATION.

Signature:_____**Date**: _____

Publications/Resources Related to Industry-Recognized Standards

Following are a but a few informative publications on industry-recognized standards arranged by date. Individuals having further interest will find many other reports and research publications exist.

Willis. *"Skill Standards: A Primer."* (1995) Center for Workforce Development; Institute for Educational Leadership. Authoring Institution: Employment and Training Administration (DOL), Washington, DC. Downloaded 03-29-2020, from https://wdr.doleta.gov/opr/fulltext/95-voluntary.pdf; https://eric.ed.gov/?id=ED383887

Aragon, Woo & Marvel. (2005). *The Role of National Industry-Based Skill Standards in the Development, Implementation, and Assessment of Community College Curriculum*. Journal of Career and Technical Education. 21. 2005-35. 10.21061/jcte.v21i2.659. Downloaded 03-29-2020, from https://ejournals.lib.vt.edu/JCTE/article/view/659/962; https://eric.ed.gov/?id=EJ1069513

McClelland & Carrick (2015) State Responses to the Skills Gap. Successful Policies Advancing Industry Credentials and Manufacturing Education. Manufacturing Institute. Downloaded 03-29-2020, from http://www.themanufacturinginstitute.org/~/media/0468D097362F405CB894A4296E13B66E/States_Report_3_9_15_no_hyperlinks.pdf.

Ganzglass, Porter & Zanville. (2017) *Embedding Industry and Professional Certifications within Higher Education – Report on Phase I Study.* Downloaded 03-29-2020, from https://www.luminafoundation.org/files/resources/report-on-phase-i-study-embedding-industry-professional-certifications-within-higher-education-january-2017.pdf

McCarthy & Prebil. (2018) *Building Better Degrees Using Industry Certifications*. Center on Education & Skills at New America (CESNA). Downloaded 03-29-2020, from https://d1y8sb8igg2f8e.cloudfront.net/documents/Building_Better_Degrees_Using_Industry_Certifications_2018-09-17_130631.pdf

Center for Occupational Research and Development & Social Policy Research Associates (2018) *Stackable Credentials Tool Kit*. Downloaded 03-29-2020, from https://www.cord.org/stackable_credentials_toolkit_EDversion_2018.pdf

Excellence in Education & Burning Glass Technologies. (2019) *Credentials Matter Report 1: A National Landscape of High School Student Credential Attainment Compared to Workforce Demand*. Downloaded 02-29-2020, from https://www.burning-glass.com/research-project/credentials-matter/.

Registered Apprenticeship Resources:
   Apprenticeship Toolkit – Advancing Apprenticeship as a Workforce Strategy
   https://www.dol.gov/apprenticeship/toolkit.htm

   A Quick-Start Toolkit – Building Registered Apprenticeship Programs
   https://www.doleta.gov/oa/employers/apprenticeship_toolkit.pdf