Curriculum and Certification Development Process

Background for Workcred/APLU/UPCEA Convenings

Introduction

To support shared understandings, APLU, UPCEA, and Workcred have detailed some of the integral parts of curriculum and certification development. By no means is this document comprehensive and all-inclusive of the highly-nuanced processes of designing or revising four-year degrees and industry-recognized certifications; rather this document serves to expose leaders from each domain (higher education and certification bodies) to the work being done elsewhere.

Curriculum Development Process

Four-year Degrees

Four-year degrees are typically comprised of two different types of courses: general education courses and major-specific courses.

- General education courses emphasize many of the skills valued by employers, often termed 'soft skills' (verbal and written communication, critical thinking skills, creativity, adaptability, etc.), and imbue the skills of being a lifelong learner—one that can understand contexts, seek information, and interact in environments in which they have received no formalized training.
- General education curricula are comprised of courses from many different academic departments and are sometimes termed 'interdisciplinary programs' for this reason. Some individual courses can themselves be interdisciplinary, including content from multiple academic disciplines in one course.
- Courses in a major are specific to the program of study/degree a student pursues.
- Major courses may include requirements tied to specialized accreditations or focus on areas of expertise of faculty members at the institution.

Curriculum and course content can be influenced by a variety of factors. Faculty interests/research, industry relationships, departmental requirements, school/college/institutional requirements, and the requirements of outside entities (state boards, national and regional accrediting bodies, etc.) can all influence individual course content and the curricula of programs. Courses that count towards a bachelor degree must not exceed a certain number of "credit hours" (typically 120). This limit is put in place due to the cost and time students incur to complete their degree programs and state and federal accountability measures and financial aid requirements. Students sometimes take additional courses that exceed the credit hour cap in cases of double majors (e.g., BS in biology and chemistry), or multi-degree programs (e.g., BS in Nursing and BA in political science).

In general, new programs and courses (and significant course revisions) must be reviewed and approved at many levels before they can be delivered. The processes for reviewing and approving new courses and significant course content revisions typically occur over a shorter timeline than the academic program approval process. Many course content revisions can be executed by instructors and faculty without additional approval.

Most programs must be approved within an institution by an academic department, college/school governing body, dean of the college/school, provost, president, and the institutions' governing body (board of governors/directors/trustees, etc.). Once these approvals have been granted, the institution is often required to seek approval from a state entity, the institutions' accreditor, as well as any professional associations or

accrediting bodies that exist relevant to the major. Depending on the complexity of the approval process, it can take years from inception to the first course offerings of a new program.

In most cases, the instructional content of four-year degree programs and courses is reviewed at some interval determined by the institution and/or its accrediting bodies. In many cases this is every three to five years. Between formal reviews, faculty members regularly update their course materials, in keeping with the learning objectives for the course, as they see fit.

Certification Development Process

Background: Understanding Terminology

There is a great deal of confusion in the marketplace about the various types of credentials, how they differ, and the appropriate use for each. Adding to this confusion, credentialing terms such as “certificates” and “certifications” are often confused and misused. Although they sound similar, they are in fact very different:

> **Certificates** are generally associated with training or educational courses, and are "good for life," meaning they carry no time limit or renewal requirement. A certificate cannot be revoked for reasons of incompetence or unethical behavior. There are multiples types of certificates (e.g., certificate of participation, certificate of achievement, assessment-based certificate). Only assessment-based certificates measure the knowledge and skills learned in the education or training experience. Certificates can be issued by both higher education institutions and professional associations
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> **Certifications**, on the other hand, are generally created for high-stakes areas such as health, safety, and finance, where they are often required to obtain a specific job or position. Certifications are based on a job task analysis – a systematic analysis of the job or practice area – and an examination is used as a third-party, independent judgement that the individual obtained the competencies required. Certifications are time-limited and can be revoked for incompetence or unethical behavior.

Figure 1: Elements of a Certification

Certification	
Assessment created by	o Industry or professional association certification bodies
Awarded by	o Industry or professional association certification bodies
Awarded for	o Third-party, independent, competency assessment
Indicates	o Skill/competency mastery
Time to complete	o Variable – as designed
Time and renewal requirements	o Time-limited o Renewable through a recertification process
Revocation process	o Can be revoked for incompetency or unethical behavior
Certification standard for being accredited	o ANSI/ISO/IEC 17024, an international and national standard
Content standards	o Based on a job task analysis o Should be reviewed/revised on an annual basis

Developing a Certification

ISO/IEC: 17024:2012*, Conformity assessment – General requirements for bodies operating certification of persons*, is a national and international standard that establishes benchmarks for the development and operation of quality certification programs. The basic elements involved in creating a certification are outlined below, many of which can be developed in parallel:

Figure 2: Key Steps to Develop a Certification

Determine the scope of the certification

The certification body is responsible for defining the scope of the certification, as well as for any decisions relating to expanding and reducing the scope of the certification.

Create a management structure

The certification body must document its structure, policies, and procedures in order to manage impartiality and to ensure that the certification activities are undertaken impartially. When the certification body is a defined part of a legal entity, the structure must include the line of authority and the relationship to other parts within the same legal entity. Offering training and certification for persons within the same legal entity constitutes a threat to impartiality. A certification body that is part of a legal entity offering training must, among other steps, identify and document threats to its impartiality on an ongoing basis, and must have a documented process to demonstrate how it eliminates or minimizes those threats.

Identify resources to operate the certification

The certification body manages and is responsible for the performance of all personnel involved in the certification process.

Build the certification scheme

The certification scheme is the foundation upon which the certification is based, and must include the involvement of appropriate experts. A certification scheme involves the following elements:

- Scope of certification
- Job task analysis and descriptions
- Required competence – knowledge and skills
- Abilities (when applicable)

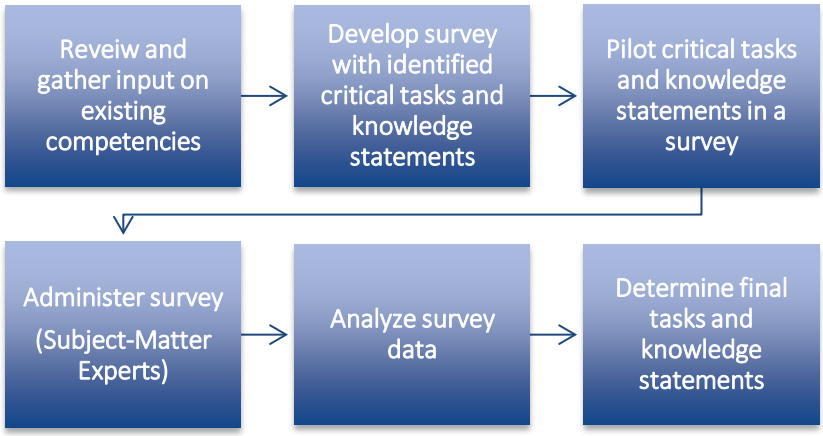
- Prerequisites (when applicable)
- Code of conduct (when applicable) describing ethical or personal behaviors required
- Criteria and assessment methods for initial certification and recertification
- Surveillance methods and criteria (if applicable)
- Criteria for suspending and withdrawing certification
- Criteria for changing the scope or level of certification (if applicable)

Job Task Analysis to Examination Cycle

Underpinning the certification exam is a job task analysis – a systematic analysis of what people do and know to complete a job or task. The main purpose of a job task analysis is to develop the blueprint for the certification exam, but it can also be useful in developing body-of-knowledge studies, educational content and offerings, professional development activities, and candidate criteria.

A full job task analysis breaks down tasks into knowledge, skills, and abilities (KSAs), and sometimes the specific steps as to how the work is performed. This process of gathering input about KSAs can be done through a combination of activities including a focus group of subject matter experts (SMEs), a DACUM (developing a curriculum), shadowing, literature review, or interviews.

Figure 3: Example of a Job Analysis to Examination Cycle



The development of the examination is an intensive process that involves a psychometrician who develops a test bank of questions. Each question or test item is reviewed by SMEs for bias related to culture, gender, sexual orientation, and geography, and is reviewed in a timely manner to examine how each question or test item is performing. The initial exam form should be pilot-tested and a passing score (or cut-score) established. It is important to ensure that an adequate number of candidates representative of the candidate population participate in the pilot test; this number may vary, but 30-50 test takers is generally seen as the accepted minimum. Significantly, there is also an ongoing process for how exams should be revised to represent changing knowledge.

Create policies and procedures

A number of policies and procedures must be developed, ranging from determining prerequisites for the certification to policies for filing appeals and complaints:

- Prerequisites for the certification
- Criteria for initial certification
- Certification processes:
    - Application
    - Assessment process
    - Examination process
    - Accommodations for special needs
    - Decisions on certification
- Due process for suspending or withdrawing a certification
- Records and information requirements
- Appeals
- Complaints
- Use of logos/marks

Develop the recertification process

Certifications include a recertification or renewal component, which have specific requirements for when a person must update his/her certification. Recertification requirements should be based on the initial job task analysis and should be used as a signal to the employer of continued competence. In an ideal situation, an individual who obtains his/her certification in 1990 and 2020 would both have the knowledge and skills for competent performance.

Creating the management system for continuous quality improvement

The certification body must establish, document, implement, and maintain a management system that is capable of supporting and demonstrating the consistent achievement of the requirements of ISO/IEC 17024.

Accreditation for Certification Bodies

What stands behind a credential – how it is developed and maintained – is critical to its quality, market value, and effectiveness. Rigor and adherence to best credentialing practices are the foundation of well-developed credentialing programs. Nationally- and internationally-accepted standards exist to ensure the quality of these programs. ISO/IEC: 17024:2012*, Conformity assessment – General requirements for bodies operating certification of persons*, is a national and international standard that sets the bar for certification programs.[1] Accreditation to the standard by an organization such as the American National Standards Institute (ANSI) provides a neutral, third-party attestation that a certification program meets globally-accepted benchmarks, increasing the integrity and mobility of the credential holders.

The process used by ANSI to accredit certification bodies is based on an international standard (ISO/IEC 17011). Adherence to a rigorous internationally-recognized accreditation process ensures that the process conforms to the highest accreditation standard and represents the best practices in accreditation. The ANSI accreditation process involves both a review of a paper application and the performance of an assessment (onsite visit) to

[1] For certificate programs, ANSI/ASTM E2659-18, *Standard Practice for Certificate Programs*, is the globally-recognized American National Standard.

validate information provided by each applicant. The use of an onsite assessment for accreditation of personnel certification agencies is unique to ANSI.