Concepts and Standardization in Areas Relating to Competence

Simon Grant, JISC CETIS, UK
Rowin Young, JISC CETIS, UK

ABSTRACT

This paper reviews terminology, motivation, history and current work in areas relating to skill or competence. Many useful services, clarifying pathways within and from education to employment, self-assessment, and selection would be facilitated by better standardization of the format in which related definitions are represented, and also by a standard approach to representing the structured sets often called frameworks. To be effective, information models underlying interoperability specifications must be based on common conceptual models; the authors propose one such model as a work in progress. The authors see the way forward as reaching greater consensus about the components of competence, including intended learning outcomes, agreement on a model for frameworks allowing reuse of and comparison between components in and between frameworks, and investigation of how requirements and claims for skill and competence can be coordinated in the light of common practice in recruitment.

Keywords: Competence, Competency, Conceptual Modelling, Frameworks, Modelling, Standards

INTRODUCTION

This paper is prompted by the sharp rise in interest in electronic representations of skills, competencies, learning outcomes, and related definitions. In response to this interest, the paper asks several fundamental questions about this whole area. The key question is, how can we progress through concepts and models towards the kind of useful specifications and standards that can enable the many real services that may well be demanded? The paper’s approach is primarily to review and synthesize existing work, but additionally the opportunity is taken to present a new proposal, for the representation of the many related kinds of “framework” structures of skills, competencies, etc., which are widespread across very many domains in education and employment. This is offered for further discussion and critique.

COMPETENCE: CONCEPTS AND TERMINOLOGY

This first main section addresses the different terms used, and offers first suggestions for drawing them together.

The term competence is subject to a range of subtly different interpretations across different standards and projects. In natural language, it
refers to “the condition of being capable; ability” (HarperCollins, 1994), encompassing notions of possessing sufficient skill and knowledge in order to fulfil some role or perform some task. Interpretations used by standards in the competence domain (discussed below) share this general sense, but are complicated and diverge from each other in the detailed breakdown of its meaning. This can raise difficulties in sharing competence information as apparently synonymous terms may actually refer to somewhat different qualities. This poses a particular problem for competence information that is intended to be processed by machines rather than humans, whether because of mismatching terms or, potentially more seriously, different meanings assigned to the same term in different systems.

The HR-XML Consortium uses the term “competency” rather than “competence”, specifying that competencies are “measurable characteristics” (HR-XML Consortium, 2007), and recognising that “some competencies can be objectively measured, whereas others may only be subjectively recognized.” Although, as the name implies, the specification is particularly orientated towards business recruitment and recognition, it is easily adaptable towards educational and training contexts.

One issue that regularly arises is the question of whether competence is binary quality or not. In natural language, and in other domains such as law and biology, competence is seen as a binary, someone is either competent or not. In the educational domain, however, some uses such as that of RDCEO (IMS, 2002) and IMS Learning Design (IMS, 2003) Level C suggest that competence or competency can be graded on a scale, and that it can have degrees or “dimensions” (RDCEO).

A competence may be made up of a number of sub-competences, for example, competence in a foreign language requires the separate skills of understanding written or spoken text and constructing written or spoken responses; these can be represented through the use of multiple linked elements. Whereas lower level competences may be seen as binary, these higher level ones might be seen as able to be partially fulfilled.

The TENCompetence project’s definition of competence (TENCompetence, 2009) makes explicit the significance of context or community of practice, describing a competence as being a disposition or latent attribute of an individual, team or organisation that is situational and identified and defined in a community of practice. Similarly, the MedBiquitous definition of competence, “possession of sufficient and necessary knowledge, skill and attitude by an individual to allow her to safely and effectively perform a specific job” (MedBiquitous, 2009) is tightly focused on professional context.

HR-XML sees a statement of competency as very similar to a statement of Knowledge, Abilities, Skills and Other Characteristics (“KASOC”) which formed the basis for their concept. The KASOC acronym is specifically excluded by HR-XML in part because the term competency is a far more familiar concept and was felt to be more meaningful (although this familiarity can be seen to lead to confusion and multiple meanings).

The Chartered Institute for Personnel and Development makes a distinction between competency, “the behaviours that employees must have, or must acquire, to input into a situation in order to achieve high levels of performance” and competence, “a system of minimum standards ... demonstrated by performance and outputs” (CIPD, 2009). This suggests that an individual can demonstrate competence without necessarily acquiring the expected competencies, or achieve competencies in a field without necessarily demonstrating competence.

The concepts of competence and competency are clearly closely related to, although not the same as, the concept of an intended learning outcome (ILO) from a course of study or vocational training. An ILO is a statement of the standard of knowledge, skill, etc. a learner is expected to acquire and to be able to demonstrate by the end of a course of study or training; it is equivalent to the objectives of a learning opportunity as defined by the Metadata for Learning Opportunities (CEN, 2008) specification and the European Learner Mobility work (EuroLM, 2009).
Related Content

The Standards War Between ODF and OOXML: Does Competition Between Overlapping ISO Standards Lead to Innovation?
[www.irma-international.org/article/standards-war-between-odf-ooxml/39086/](http://www.irma-international.org/article/standards-war-between-odf-ooxml/39086/)

Predatory Strategies in Standards Wars: On Creating Fear, Uncertainty, and Doubt
Tineke Mirjam Egyedi and Anique Hommels (2016). *Effective Standardization Management in Corporate Settings* (pp. 333-351).
[www.irma-international.org/chapter/predatory-strategies-in-standards-wars/141776/](http://www.irma-international.org/chapter/predatory-strategies-in-standards-wars/141776/)

Standards Management in the Twenty-First Century: Architectural Challenges and Management Opportunities
Michael B. Spring (2016). *International Journal of Standardization Research* (pp. 34-44).

Concepts and Standardization in Areas Relating to Competence
Simon Grant and Rowin Young (2013). *Innovations in Organizational IT Specification and Standards Development* (pp. 264-280).
[www.irma-international.org/chapter/concepts-standardization-areas-relating-competence/70704/](http://www.irma-international.org/chapter/concepts-standardization-areas-relating-competence/70704/)

Mass Media Strategies: Hybrid Approach Using a Bioinspired Algorithm and Social Data Mining
[www.irma-international.org/chapter/mass-media-strategies/75036/](http://www.irma-international.org/chapter/mass-media-strategies/75036/)