A study of digital curator competences: A survey of experts

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Abstract   The aim of this research was to define competences for digital curators, and to validate a Delphi process in the context of Library, Archives, Museum curriculum development. The objective for the study was to obtain consensus regarding competence statements for Library, Archives and Museum digital curators.

The Delphi method, a research technique, typically used to develop a consensus of opinion for topic areas in which there is little previously documented knowledge, was used in specifying the digital curator competences in LAM context. Three rounds of questionnaires with controlled feedback with space for comments and/or suggestions were sent to panel members. Five point Likert scale was employed in the questionnaire. Consensus was determined when a competence statement received a mode higher than 3, an average mean more than 3.5, and a standard deviation smaller than 1.0.

Response rates for rounds I, II and III were: 70% ($n = 16$), 87.5% ($n = 14$), and 94% ($n = 15$) respectively. Of the 18 digital curator competences listed in the first round questionnaire, 13 (70%) achieved consensus as being necessary digital curator competences required of advanced level digital curator. Other inputs of respondents like comments and suggestions were also analyzed. An additional 23 digital curator competence statements were also suggested by the panel in round I and further developed in subsequent rounds. In round II, 12 (30%) competence statements achieved consensus. The final round and editing of competence statements led to 20 statements that describe what a well-prepared digital curator trained to participate in digital curation work should be able to do.
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Introduction

Background and context

In today's data center-centric world, the development of digital technologies, cloud and big data had dramatically changed the way people create, access, share and store data. It had produced significant sets of data that promotes rapid improvements across many subject fields. These sets of data come in many different forms, for example, "the measurements recorded by environmental monitoring satellites, the products of collisions between fundamental particles, the sequences of entire genomes, the results of social science surveys and interviews, the annotated images of ancient Greek inscriptions or the annotated videos of innovative dance routines" (Hodson, 2009:1). These data can be useful in other parts of the world now or can be a wealthy source of information for future researchers.

Libraries, archives, museums (LAM) is at the center of this digital innovation. LAM provides platform that allows the use of digital technologies in improving access of complex objects and enriching the experience users get from cultural resources. However, technological developments in LAM context bring not only new opportunities; they come also with corresponding challenges.

One of the challenges brought by digital innovation is that of digital curation, this is because if data are not properly curated and kept in well-managed data centers, they really do not have the potential to be accessible and reusable either now or in the future and that makes the very existence of LAM useless because it makes research a failure (Maidment-Otlet & Redfearn, 2010). Digital curation summarizes the different activities involved in making digital objects valuable for present day or long-term use, this includes activities such as selection, documentation, management, storage, conservation, security, preservation, and provision of access (Harvey, 2010).

Now is an important time to possess knowledgeable and skilled digital curators who will manage digital assets, but as Forster, Director at European Commission's Directorate General for Information Society and Media, observed that while there is a demand for knowledge and skilled people to perform digital curation, "the profession of a 'digital curator' has not yet been defined and it might be worthwhile to do it" (Forster, 2008:7).

Digital curation and preservation experts mostly from European member states and United States agree with Forster that there is a need to identify the digital curation profession and this can be done by identifying the sets of skills and competences for digital curators. They acted positively to initiatively seek the recognition or even the validation of informal and non-formal learning and the professional figure of the digital curators. They meet, set projects and workshops to be able to come-up with established frameworks of standards for digital curators, dealing with the basic skills and competencies such as curriculum development, training, education and tutorial support (Ball, Day, & Patel, 2008; Harvey, 2010; Pryor & Donnelly, 2009; Pomerantz et al., 2009; Tibbo, Hank, & Lee, 2008).

These efforts are based on the idea that workers need to be educated and be evaluated on the knowledge and skills and attitudes required for successful performance in the workforce (Le Deist & Winterton, 2005). This is grounded on claims that competency-based training improves the education and training sector's responsiveness to the society and produce reliable outcome (Hoffman, 1999; Robinson, Sparrow, Clegg, & Birdi, 2005). This approach has been applied in the field of library and information science in the USA (Weech, 2010) and more recently in Europe, which taught that the agreed competence statement will improve mobility flow in and out of Europe and advance the Bologna Process (Tammaro, 2005, 2006, 2011).

Currently, there is no accepted and professionally official route to acquiring knowledge and skills for digital curators and few people therefore have them (Forster, 2008; Yakel, 2007). Bridging this skills and knowledge gap is perhaps the most significant challenge of all. The research question to be answered in research will be: What competences are necessary for digital curators working in Library, Archives, and Museum context?

The aim of this research was to define competences for digital curators, and to validate the competences in the context of library, archives and museum curriculum development. The objective for the study was to obtain consensus regarding competence statements for library, archives and museum digital curators.

The professional education needs of digital curators lack clear definition (Forster, 2008; Pryor & Donnelly, 2009). This study will help in bringing clarity to the most important competences that digital curators should have. It will also focus on the most important competences for digital curators through the perceptions of a panel of experts. Moreover, this study will be a help in the design of a professional education and training system for digital curators that keep pace with demands that have and continue to undergo significant change from the past professional development requirements.

The development of digital curation is still in infancy stage and the process can be strongly felt from US and European institutions, therefore the scope of this study was limited to perceptions of a small sample of key informants and most experts with a European and US digital curation and preservation orientation and thus, the results of the study reflect a European and US perspective. The findings may not be generalized outside its original selected key informants and panelists.

Literature review

An overview of digital curation

Digital curation is a relatively new domain emerged as a result of overall changes in creation, distribution and use of data. Several authors from Library and Information Science, Archival and Records Management, Computer Science fields have discussed the development and the nature of the concept of Digital curation in general, for example Beagrie (2006), Yakel (2007), Williams (2009), Ray (2009), Duranti (2005), Harvey (2010), Cunningham (2008), Tibbo et al. (2008) and Lord and MacDonald (2003a, 2003b).

Although the concept of digital curation is still young, what it can do has been eyed as very beneficial not only in short term period but in long-term period too, it is