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Critical perspectives on current professional positioning on themes of digital transformation in the United Kingdom

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Introduction

The digital transformation of the galleries, libraries, archives, museums, and records (GLAMR) sector continues apace with innovative technological trends, including artificial intelligence (AI). These developments are not evenly distributed and, as with many new technological developments, the early adopters of new technologies via pilot projects are more commonly found in wealthier, urban areas rather than in remote, rural areas (Nguyen, 2020). These developments have led to consideration of how the library and information science (LIS) profession may change and whether these changes will be markedly different from previous responses to technological developments. Information is now truly everywhere and LIS professionals need to consider the diversity and disparity of information and how it can be managed, stored and utilised. Furthermore, developments such as AI mean that a variety of data sources can now be drawn together much more easily and used in novel ways. This raises new challenges for information ethics and, crucially, professional responsibility in the information society.

Practice for the information professions is positioned between people and information access, now heavily reliant on information and communication technologies (ICTs). Information professionals, therefore, have a key role in responding to the ethical challenges raised by technology and are well-placed to proactively contribute to conversations around socio-technical systems development and use, including artificial intelligence (AI). While issues such as mis-/disinformation are not new, ICTs are contributing to their effective spread (e.g., Shirish et al, 2021). Sophisticated methods to assess information and its sources are therefore needed (e.g., Rubin, 2022). Artificial intelligence has been suggested as an effective method (Rubin, 2022), however technical design requires ethical design (e.g., Mökander et al, 2021) to avoid human harm and perpetuating and amplifying biases (Obermeyer et al, 2019).

Broadly, this work paper seeks to critically evaluate the assertion that the LIS profession can and should play a key role in influencing discourse around the ethics of digital transformation, including socio-technical systems and AI development. To address this aim, this analyses data from three sources representative of the profession: course syllabi, job advertisements, and relevant association body documentation. Focus will be on evaluating current teaching, practice needs, and association positioning of themes of digital transformation, such as AI and information ethics. The work will also consider the impact of AI and related digital transformation on current and future roles in the LIS profession and conceptual development of what an LIS perspective of the professional role of contributing to discussion of information ethics in applied contexts. Building on previous work in the Australian context (Tait & Pierson, 2022), this paper will present findings from the United Kingdom (UK) context with comparison of selected findings.

Background

While considered in other professions, e.g., medicine, digital transformation, including the impact of AI,

has had less attention in the LIS literature until recently (Wood & Evans, 2018). It has been asserted that the LIS profession is generally slower to integrate technologies into practice, despite general trends to leverage novel technologies (Yoon et al., 2021). However, the significant impact and professional leveraging of ICTs has prompted the need for academic research and knowledge sharing from practitioners to ensure currency and securing professional roles as thought leaders to influence technological development (Winkler & Kiszl, 2022). For example, AI must be understood beyond its mechanical implications for its developments powered by informatics, and therefore also its social implications (Cockshott & Renaud, 2016). Professional involvement in developmental discussions and efforts has been slow to develop outside of large academic libraries, such as Stanford and MIT (Wheatley & Hervieux, 2019). This is despite large professional associations, such as the American Library Association, pushing for greater library involvement in such developments. It has similarly been argued that the LIS sector is well positioned to contribute to discussions associated with AI through information ethics as a professional mechanism to negotiate issues of, for example, bias which are sure to arise in automation (Burgess & Knox, 2019).

Integration of new technologies into the workforce typically also raises questions of impact on labour, which has similarly been discussed in library contexts (Cockshott & Renaud, 2016, Wood & Evans, 2018). An important distinction is between assistive technologies and those with the likelihood to replace humans, such as reference librarians (Calvert, 2017). Replacement by automation may suggest prioritising of time and expertise to address more complex professional challenges (Fernandez, 2016). For example, AI generated metadata with professional supervision for accuracy and ethical questions, such as representation in controlled vocabularies (Corrado, 2021). A degree of professional shared understanding of these technologies is foreshadowed by their likely impact in necessitating training and knowledge sharing (Hervieux & Wheatley, 2021). Similarly, co-occurring with digital transformation is the redefining of certain institutional roles, for example university libraries in civic engagement for lifelong learning (Llewellyn, 2019).

Despite a history of adaptation and integration of technologies, the profession is often considered as being in a ‘constant state of change’ (Howard et al., 2016). Such claims often include varying, and sometimes conflicting, suggestions of professional direction. Such discussions naturally implicate professional education, as curricula must reflect changes in society and practice. Information professionals must have necessary and relevant skills and LIS programmes must be able to claim jurisdiction (with accompanying metrics) in university environments of varying organisational structures (Marcella and Oppenheim 2020; Weatherburn & Harvey, 2016; Partridge et al 2014). Additionally, such programmes must be able to demonstrate alignment with relevant accrediting body standards, which are often those codified by professional association bodies. Moreover, to be reflective of needs in practice indicates the necessity to understand what those needs are and how they are shifting.

Research Questions

1. To what extent are topics related to digital transformation and associated ethical issues reflected in course syllabi in accredited LIS programs in the United Kingdom?
2. To what extent are topics related to digital transformation and associated ethical issues reflected in job announcements in the United Kingdom?
3. To what extent are topics such as digital transformation and associated ethical issues reflected in association body documentation in the United Kingdom?

Methodology

This study will employ document analysis (Wildemuth, 2009) drawing on three types of documents: course syllabi, job ads, and relevant association body documents.

Documents are reflective of realities that are socially constructed and can contain an accuracy that may not exist in data collected in more obtrusive measures (Wildemuth, 2009). These three groups of documents are representative of three key elements of the profession: education, practice, and association bodies. Drawing from current documentation is therefore reflective of current efforts and needs related to the topic under study. Documents, however, must be interpreted within their context, as they may also reflect specific interpretations related to their purpose (Wildemuth, 2009). The use of multiple document types in this study supports data triangulation and therefore validity of analysis.

First we will identify all accredited library and information science courses in the UK. The accrediting and

primary association body is the Chartered Institute of Library and Information Professionals (CILIP), from which we also draw on relevant association body documentation. For course subjects we will first identify all courses, then apply the study's selection criteria for further analysis. The inclusion criteria for analysis of course and association body documentation are that subject descriptions and/or content must have included at least one of the following topics: 1) AI, including machine learning and algorithms; 2) Technology/ digital technology; 3) Digital-socio phenomena (e.g., digital culture, digital divide/inclusion, etc.); 4) Analytics (use of data); 5) Management/curation of data; 6) Information/data governance and/or policy; 7) Information ethics or ethics as applied to the previous criteria. Those meeting the criteria were arranged in Google Spreadsheets with any annotations.

In order to assess better current needs in practice, these selection criteria were not applied to the identification and collection of job advertisements. Rather, to avoid confirmation bias and support sub-sector representation, we purposefully chose ten advertisements from each job listing source. Listings were chosen in the order they were posted on respective platforms.
Inclusion criteria for job ads were that they must be limited to the following types of libraries, regardless of position advertised: public, academic, and special (here defined as private sector and national level). The jobs listings sources utilised in this study were: CILIP, LinkedIn, jobs.ac.uk, reed.co.uk. These were chosen due to their widespread use as library job listings platforms in the UK.

Documents meeting respective inclusion criteria were analysed. The analytical approach employed was qualitative content analysis (e.g. Patton, 2002). The focus of analysis was on what was presented in documentation and how it was contextually framed, relative to the topics outlined in the inclusion criteria. To support analysis in, for example, course syllabi, we also included frequency of terms reflected in the first set of selection criteria.

Findings will be compared with the previous pilot study, which focused on accredited Australian LIS courses and association documentation (Tait & Pierson, 2022). Discussion will critically assess comparative findings in the context of a global information society, the ubiquity of information, including mis-/disinformation, and how findings inform the digital transformation of the LIS professions, including societal integration of advanced information technologies, such as AI, and the role of information ethics.

Discussion of preliminary findings

From our pilot study, we found that there are very few subjects that clearly address AI in Australian LIS postgraduate degree courses. However, several subjects could potentially cover these topics as part of subjects on technological innovation. In particular, numerous subjects cover important managerial or ethical dimensions to emergent technologies such as AI or robotics. Electives are an essential component for allowing students to gain understanding of the profession and to begin to pursue specialisations. Should AI become more commonplace in professional practice, some allowance of these topics will be necessary in core subjects, or at least to begin, an elective subject. Current educational focus appears to be on the social implications of information technologies while not necessarily technological processes nor always on how technological functions interact with human and social behaviour. For example, an understanding of the limitations of algorithms, e.g., in the data set, will be necessary to understand effects on users of information seeking models operationalised by such algorithms (Nakamura, 2021). Across all course programmes, Australian course subjects reviewed provide a strong foundation in LIS domain with many display cutting-edge integration of socio-technical. Future information services, however, will include issues of algorithmic influence on human behaviour, bias, and questions of ethical machine learning and AI (Obermeyer et al, 2019; United Nations, 2021; Wang & Kosinski, 2018).

This paper's goal, however, is to advance critical discussions on the role of digital transformation and the current and future information ecosystem in the information society on the profession, and the opportunities related to contributions through information ethics. Taking an international perspective, this paper therefore positions these findings relative to findings from an in-depth analysis of the educational, practice, and association body contexts as they currently exist in the United Kingdom. First, this will support understanding of how Australia compares to the information professions environment vis-a-vis the UK and assessing international concern, related to AI and associated topics, in the LIS environment.

Conclusion

Opportunities for Australian LIS professional education to respond to the new challenges of digital transformation have been outlined in the pilot study, and will be more fully explored in a comparative nature in this paper. The authors posit that advanced socio-technical information technologies will only become more sophisticated and ubiquitous in the future. The professions therefore have opportunities to contribute to development, use and in the societal responsibilities therefore. Comparative critical analysis will begin this process, highlighting collective responsibility, despite borders.

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