CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

Digital competence for a digital era: A construction design-sector practitioner perspective

The construction industry is still to embrace its digital transformation fully. A significant obstacle to this is its practitioners that are commonly reported to have insufficient 'digital skills' to leverage innovative digital solutions, that could enhance the industry's productivity and efficiency. However, limited research has been undertaken to understand their digital proficiency.

This research focusses on the UK construction design sector. Its purpose was to identify the key components of digital competence required by the design-sector practitioner population and to investigate the extent to which current practitioners fulfil them.

A semi-structured interview inquiry with 26 strategic industry experts was undertaken to derive a common understanding of practitioners' digital competence requirements. Through this, a bespoke 'digital competence framework' and a special-purpose self-evaluation survey instrument were derived and subsequently used to examine the digital proficiency of 315 members of the target population.

The research highlights that that design-sector practitioners' digital competence is much broader than operational skills. Instead, it encompasses a combination of competence attributes, underpinned by the ability to solve problems intelligently by applying digital solutions and data concepts to fulfil outcome needs. The framework developed identifies the importance of knowledge, the value of human interaction and the significance of personal approaches.

With only one-in-three practitioners achieving an advanced digital proficiency rating, the research suggests that the UK design community is not yet fully equipped to reap the opportunities afforded by the sectors' digital transformation. As such, the sector may face challenges to both drive internal digital changes and to offer stakeholders enhanced digital and data-driven services. It is suggested that business managers focus efforts on raising practitioners' proficiency in the developed framework's core competence requirements of problem-solving and data literacy, areas requiring much improvement. Unresolved this will only limit practitioners' and the sector's digital development.

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