

Assessment of socio-technical and co-design expertise in humanitarian engineering

Abstract

Humanitarian Engineering (HE) is emerging in universities and professional workplaces worldwide. HE projects exist at the intersection of engineering and sustainable community development, and therefore socio-technical and co-design expertise are fundamental. However, such skills and mindsets are difficult to teach, learn, and assess. There is a need to develop effective teaching and assessment strategies, dependent upon clearly operationalised definitions of both socio-technical and co-design expertise. The goal of our research project is to a) develop operationalised definitions of socio-technical and co-design expertise, b) develop a valid scenario-based instrument assessing such expertise, and c) use this instrument to conduct pre-post and longitudinal studies evaluating the extent to which different types of learning experiences foster the development of socio-technical and co-design expertise. Our work has produced multiple contributions to education, research, and the broader community, including identification of effective HE practices, recommendations for changes in curriculum and assessment, and more.