

## **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.