Supporting the development of shared understanding in distributed design teams

Distributed teams are an increasingly common feature of engineering design work. One key factor in the success of these teams is the development of short- and longer-term shared understanding. A lack of shared understanding has been recognized as a significant challenge, particularly in the context of globally distributed engineering activities. A major antecedent for shared understanding is question asking and feedback. Building on question-asking theory, this work uses a quasi-experimental study to test the impact of questioning support on homogeneous and heterogeneous teams. The results show significant improvement in shared understanding for both team types (27% improvement for heterogeneous and 16% for homogeneous), as well as substantial differences in how this improvement is perceived. This extends theoretical insight on the development of shared understanding and contributes one of few empirical studies directly comparing homogeneous and heterogeneous teams in the engineering design context. This has implications for how distributed teams can be more effectively supported in practice, as well as how shared understanding can be facilitated in engineering design.