

Abstract

In 2010, a new research stream began on collective intelligence, defined as a group's general ability to perform consistently well across a wide variety of tasks. Subsequent empirical evidence presents a mixed picture. Some studies have found groups to exhibit collective intelligence while others have not. To resolve these disparate results, we compare 21 experimental studies to understand what influences whether groups exhibit collective intelligence. We find that task structure is a boundary condition for collective intelligence in that groups exhibit collective intelligence across well-structured tasks but not across ill-structured tasks. For ill-structured tasks, collective intelligence has a more nuanced set of multiple factors that may be interpreted as different facets of collective intelligence. This research extends our understanding of collective intelligence by suggesting that the original definition of collective intelligence was too all-encompassing. Collective intelligence should be reconceptualized as a multi-dimensional phenomenon, similar to research on individual intelligence. We highlight avenues for future research to continue to move collective intelligence research forward, particularly regarding ill-structured tasks.

Keywords: collective intelligence; group performance; cognitive psychology