Supporting Teams vs. Individuals

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ABSTRACT

Teams are responsible for complex tasks that require diverse knowledge and coordination of effort. In tightly coupled tasks team performance has been found to depend on both teamwork skills and individual competencies. Most decision aids, however, have been designed to enhance individual performance. We report results from an experiment comparing aiding to individual decision tasks with aiding to support group communications and information sharing in a low fidelity simulation of Tactical Naval Decision Making (TANDEM). In TANDEM, three participants classify (air, surface, sub), type (military/civilian), determine intent (hostile/friendly), and dispose (shoot/clear) a series of targets presented on a simulated radar display. Each station is assigned a particular decision which requires combining information from the display and other team members. Ten teams (40 subjects) were tested in each of four conditions: 1) control (no aid), 2) individual agent (window organizing information from display), 3) team clipboard agent (window organizing information from other team members), and 4) team checklist agent (window indicating stations with access to missing parameters). Process data for communication and data gathering strategies as well as outcome measures of performance (number of targets processed and number of errors) were collected.

With the exception of correctly processing hard targets, no differences were found between all agent conditions and the unaided condition (control). In the clipboard condition, teams got more hard targets correct than in the unaided condition and spent less time on easier targets than in the unaided condition. In the checklist condition, teams hooked more hard targets than in the unaided condition and teams got more hard targets correct than in the unaided condition. These results suggest that as uncertainty and difficulty increase support for information sharing and coordination may be more beneficial than support for individual team members' tasks.