

**Impact of Communication Patterns, Network Positions and Social Dynamics
Factors on Learning among students in a CSCL Environment**

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ABSTRACT

At present, it is difficult to assess the quality of learning in Computer-Supported Collaborative Learning (CSCL) environments, because standard pretest and posttest measures do not capture the differences in the learner's ability to engage in the material, pose interesting new questions, engage others in learning and work collaboratively. This research investigated the impact of communication patterns, network positions and social dynamics factors on students' self-perception of learning in a CSCL environment.

The study involved a combination of methodologies combining questionnaires, and archiving of communication logs for data collection. Social network analysis tools were used to analyze relational data, map emergent student communication patterns and calculate centrality scores based on the electronic and face-to-face communication patterns among class members in the CSCL environment. Structural equation modeling was then performed on the hypotheses model to determine the impact of these centrality measures and the social factors on students' perceptions of knowledge gained and their satisfaction with their performance in the course.