Many studies have documented collaborative learning as having a significant positive effect on the academic performance of college students in STEM classes [1, 2, 3]. SCALE-UP classrooms, containing fifteen round tables seating nine students each, are designed to facilitate collaboration in the classroom [4]. However, intragroup dynamics and relationships can give rise to individualistic efforts, exclusion, student frustrations, and other factors that decrease the degree of collaboration achieved by the group.

Understanding how individuals within a group interact is therefore essential to evaluating the success of the SCALE-UP classrooms.

Social network analysis may be able to give such insight into intragroup relationships.

The Social Networks Were Largely Decentralized with Varying Densities

Representative examples from our data

A. B. C.

Average Network Characteristics ± SD (Min−Max)

- Density: 0.58 ± 0.21 (0.30−0.88)
- Centralization: 0.23 ± 0.10 (0.06−0.40)
- Reciprocity: 0.66 ± 0.15 (0.46−0.91)

No Relationship Between Final Grade and In-Degree

<table>
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<th>Final Grade (%)</th>
<th>Average In-Degree</th>
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</table>

Student Perceptions Illustrated High Interdependence

- I care if my group members get good grades.
  - 67%
- Everyone’s ideas are needed if we are going to be successful.
  - 95%
- I feel as if I am a part of what is going on in the group.
  - 89%
- I help the group with what I am good at.
  - 95%

**Key**

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

**References**


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