

Analyzing Online Asynchronous Discussions with a Visual Data Analytic Tool

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Research Questions

1. How do discussions in online courses of this study compare with patterns identified by previous research?
2. What other methods for determining discussion interaction quality can be used in conjunction with SNAPP data?
3. How does the SNAPP tool fit within a model for faculty development around online teaching and online course design?

Pilot Project Steps

1. Develop draft of visual taxonomy.
2. Select pilot instructors and obtain permission for data use.
3. Extract diagrams and other data from courses.
4. Send instructors taxonomy and custom reports of diagrams for their courses.
5. Interview instructors to inform potential future uses of SNAPP and to discuss potential adjustments in discussion design/facilitation.
6. Determine impact of adjustments and instructor use of SNAPP during next facilitation (next phase).

Intervention Design

Previous research by Dawson et al (2011) found need for faculty professional development in interpretation of discussion diagrams and in designing interventions to improve collaboration.

Action Steps: Design taxonomy of discussion diagrams as training aid. Instructors interviewed to discuss potential interventions with aid of taxonomy and discussion diagrams from their courses.

Previous research attempted to correlate design features with discussion quality: Etmer et al, 2011,; Zydney, J. et al, 2011; Chen, D. & Wang, Y., 2011, Baran, E., Correia, A., 2009

Action Steps: Attempt to correlate interaction patterns with cognitive level of discussion prompt and overall structure of discussion design.

How instructors can use SNAPP

- Identify key information brokers.
- Identify disconnected (at risk) students.
- Identify potentially high and low performing students.
- Indicate the extent to which a learning community is developing.
- Provide a “before and after” snapshot of interactions before and after changing discussion design or facilitation.

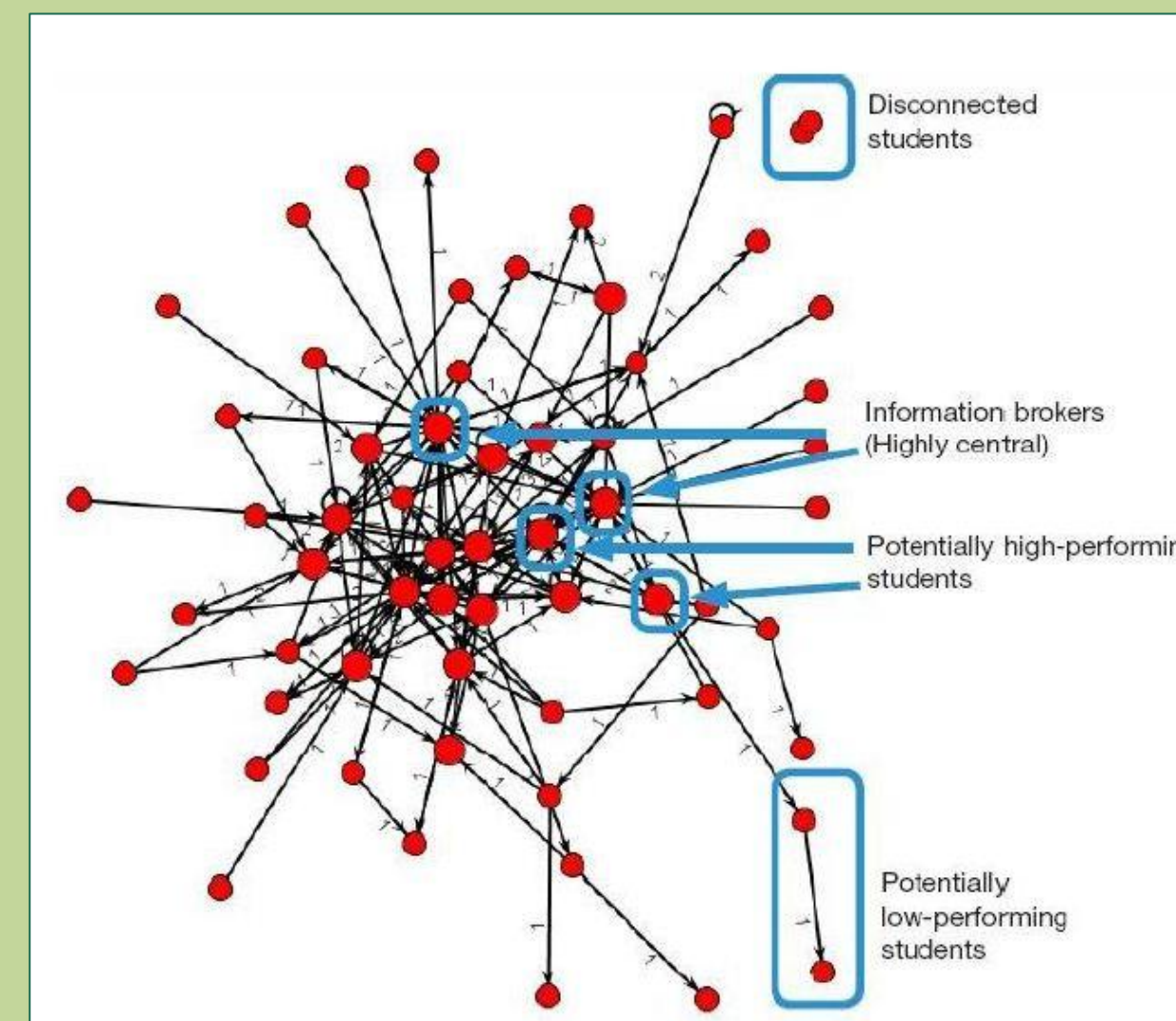
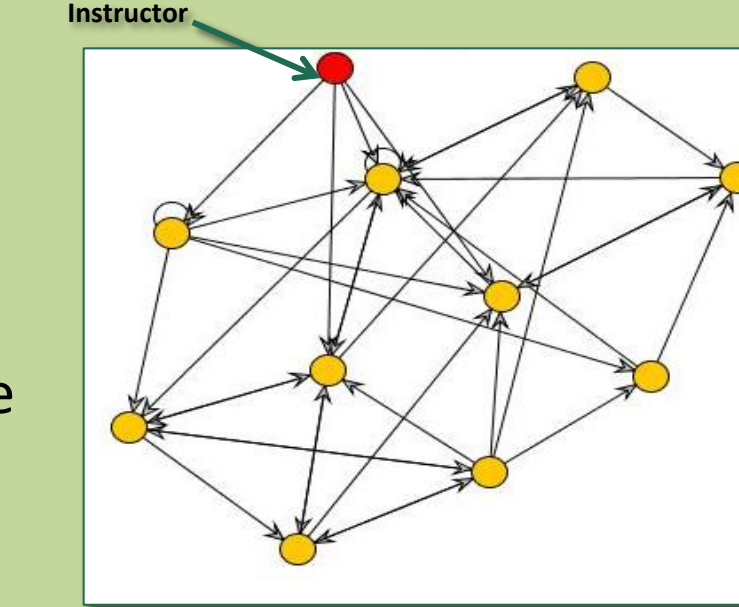


Image and information adapted from Dawson et al (2011)

Proposed Taxonomy of Discussion Diagrams

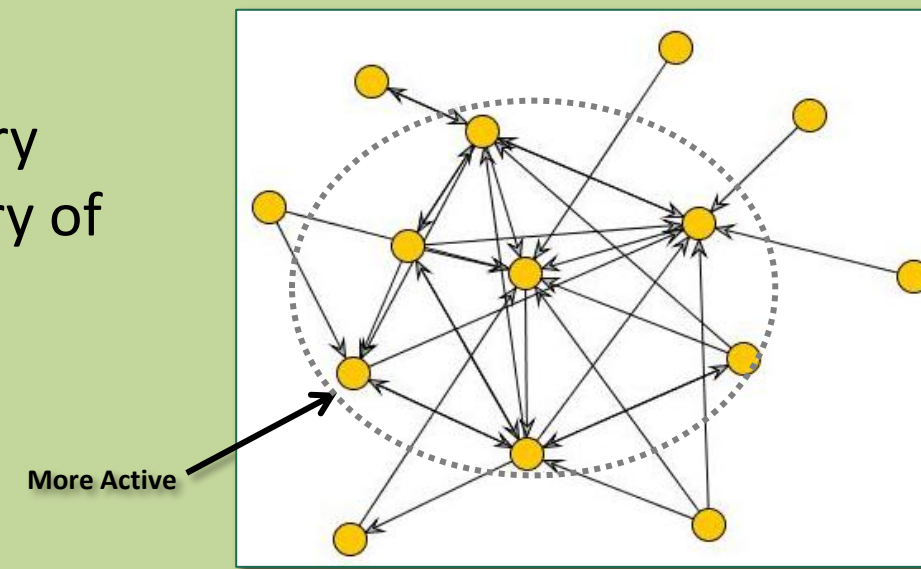
Learning Community

This pattern shows a high level of interaction among students. In some cases, there may be a large core of very active students, but the majority of students outside that core are still interacting with multiple participants.



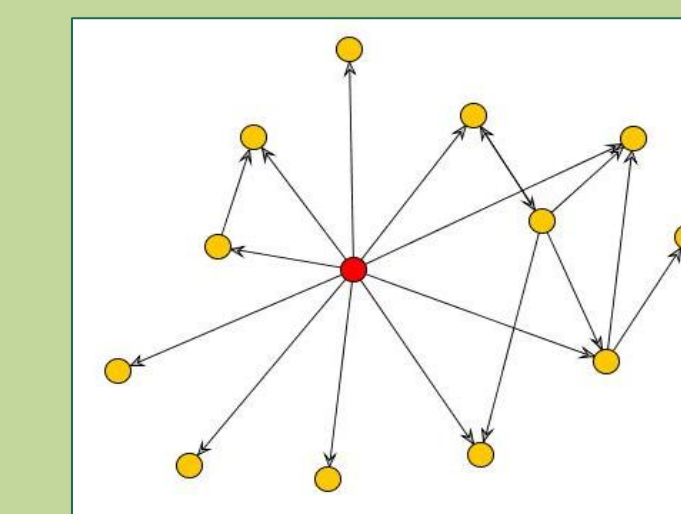
Emerging Learning Community

This pattern shows a core of very active students, with a periphery of much less active participants.



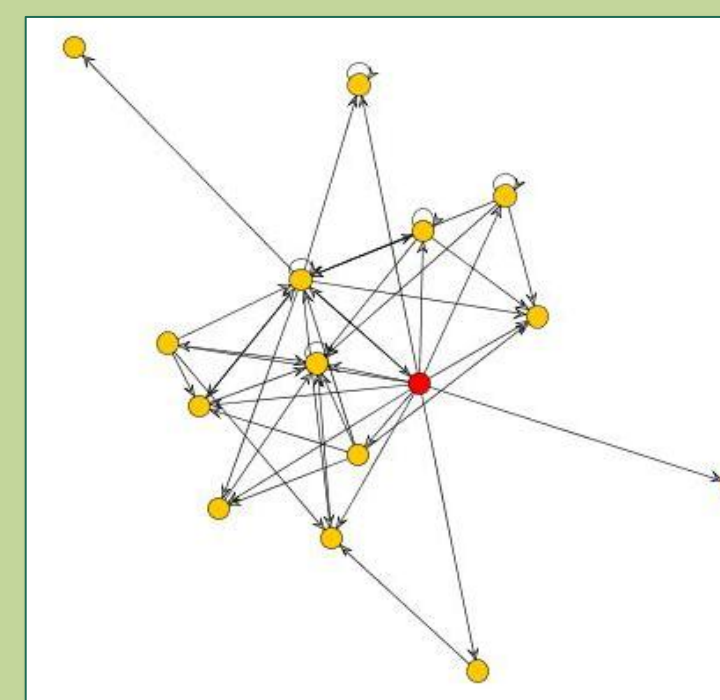
Instructor-Led

This pattern shows a discussion in which the great majority of interaction is between individual students and the instructor (node at center). There is little interaction among students.



Emerging Learning Community with strong instructor presence

This pattern shows a core of very active students with a periphery of some much less active participants and with strong instructor presence.

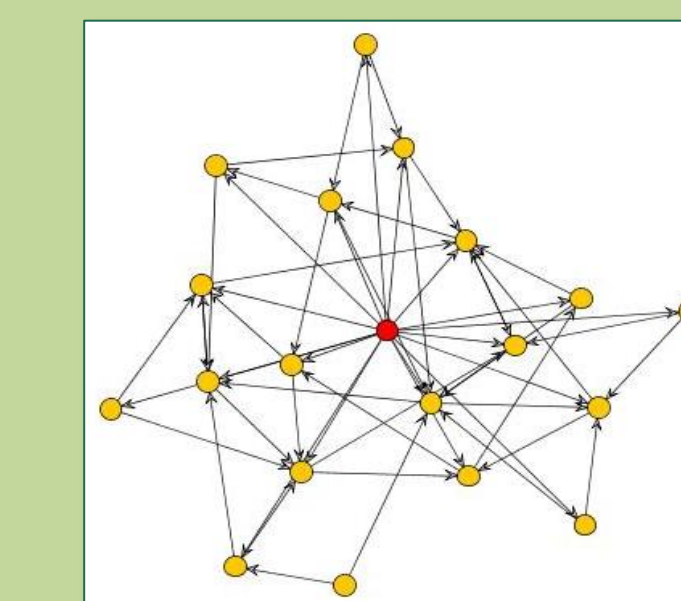


This pattern is essentially a combination of two patterns: *Emerging Learning Community* and *Instructor-Led*.

Learning Community with strong instructor presence

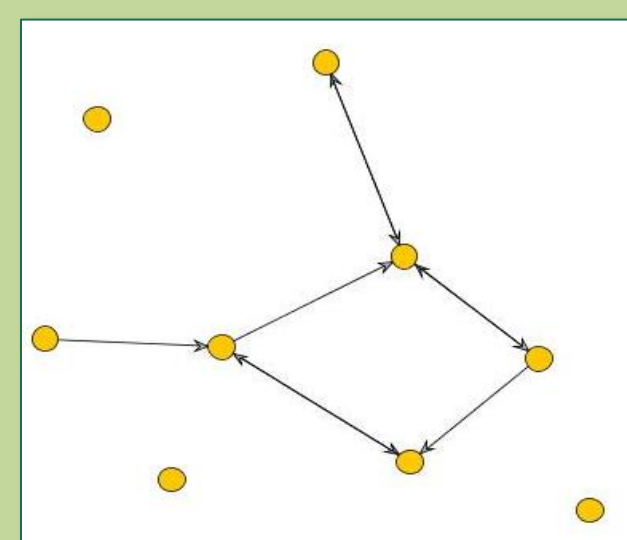
This pattern shows a high level of interaction among students with a strong instructor presence.

This pattern is essentially a combination of *Learning Community* and *Instructor-Led* patterns.



Weak Learning Community

This pattern shows the majority of students with low levels of interaction. There may be students who are disconnected from the discussion. This means that they have made an initial post, but nobody has responded to them nor have they responded to anyone else.



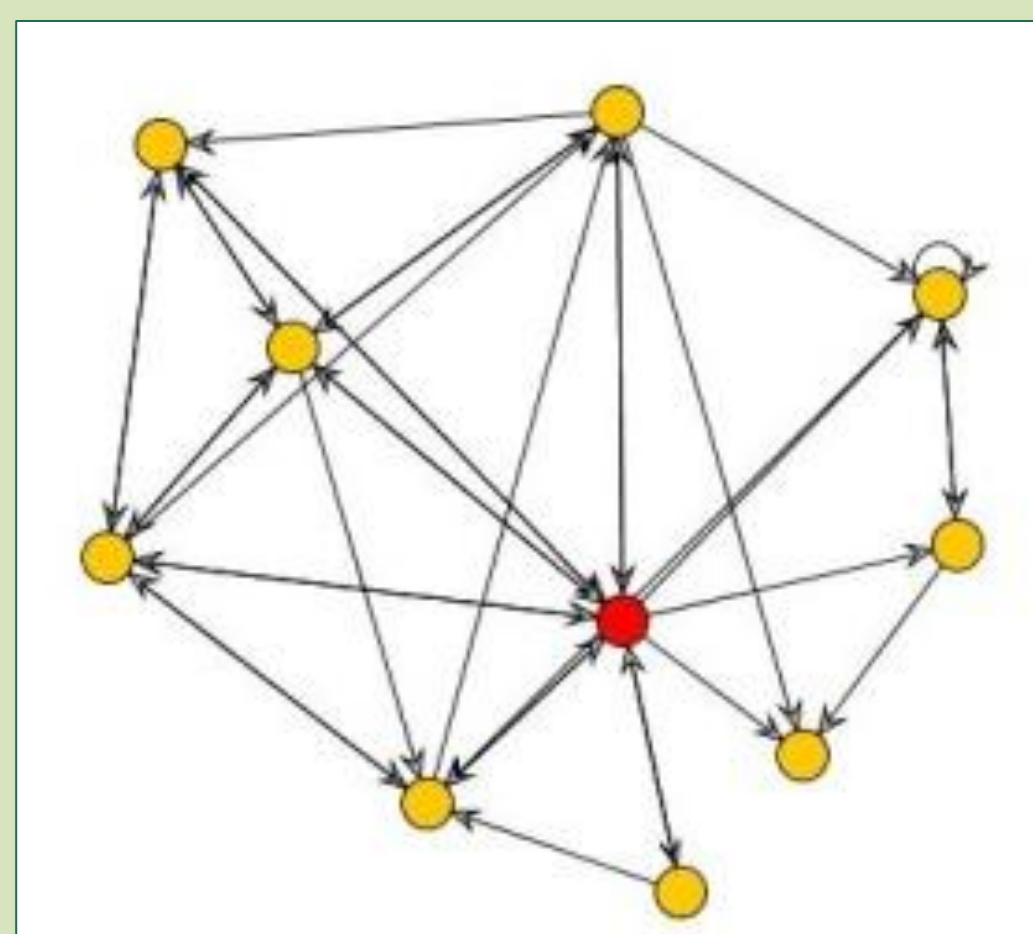
1. Instructor Matson

Learner Population: Undergraduate Business

Typical Pattern: Learning Community with strong instructor presence

Intervention Suggestions: Reduce number of instructor postings, add summary or “weave” following discussion, use student-led facilitation, organize discussions with use of titled initial posts.

Intervention Plans: Reduce instructor posting in some discussions and better organize initial posts.



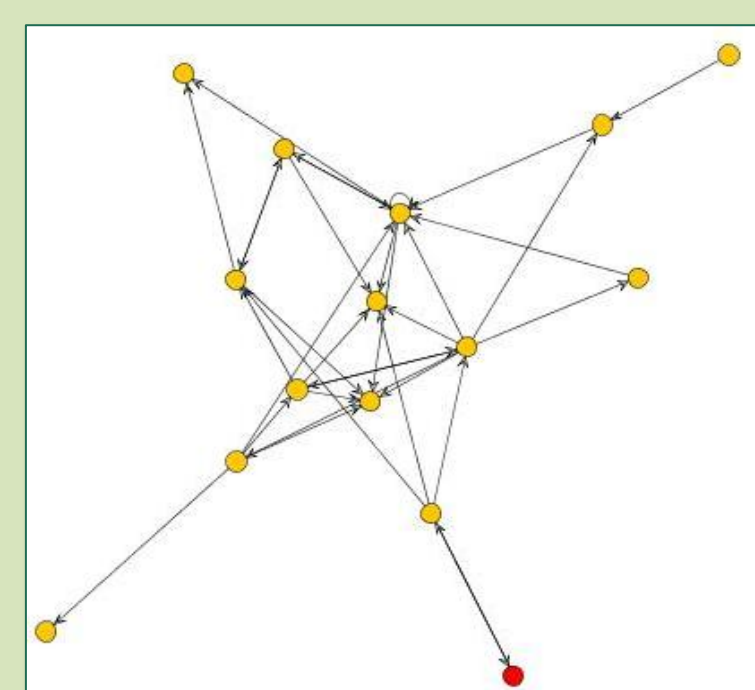
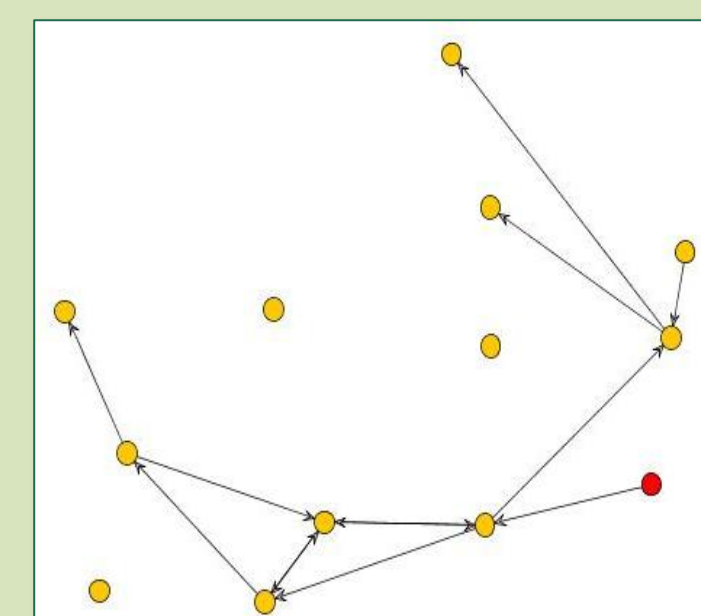
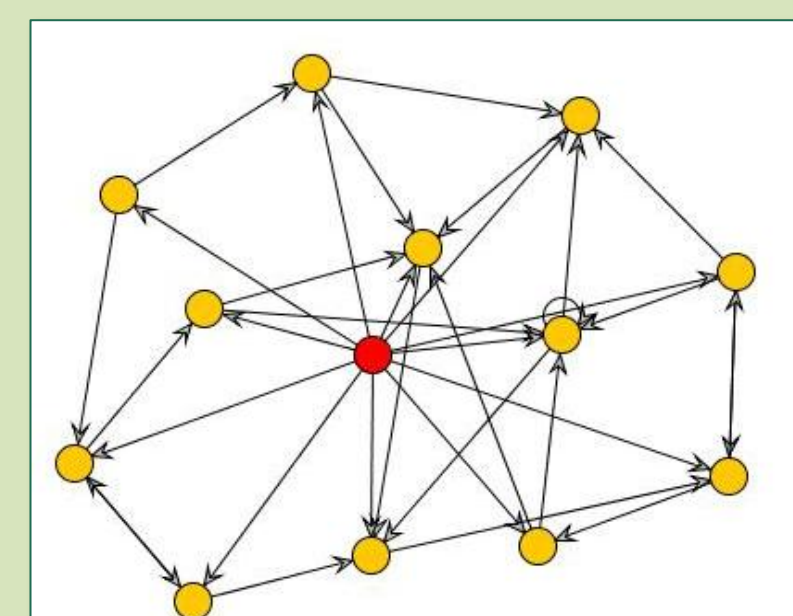
2. Instructor Paulson

Learning Population: Graduate Education

Typical Pattern: Mixed

Intervention Suggestions: Consider alternative tools for some discussions, add more structure to prompts and guidelines, consider different facilitation role.

Intervention Plans: Use SNAPP tool for all potential intervention suggestions.



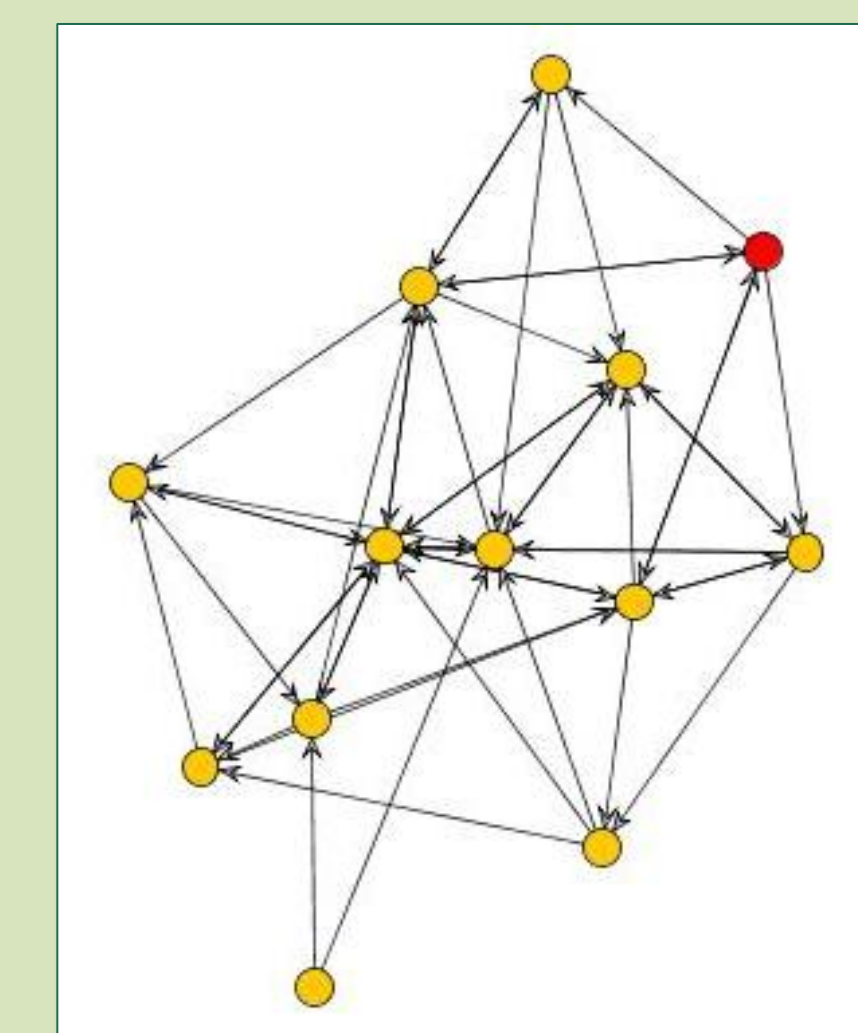
3. Instructor Hinson

Learner Population: Undergraduate

Typical Pattern: Learning Community

Intervention Suggestions: Use SNAPP to identify information brokers (class leaders) and identify less engaged students.

Intervention Plans: Divide information brokers into lead roles for subsequent small group activities. Use reminders for less engaged students.



Selected Bibliography

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