

Size Matters

An exploratory study of the impact of discussion forum format on social presence and cognitive presence

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Driven to DiscoverSM

Background

- Online student interaction
- Community of Inquiry model (Fig. 1)
- Exploratory study
- 6 forum types: 3 full-class (Moodle, Consider.it, Flipgrid) and 3 small group (random, programmatic, self-select)

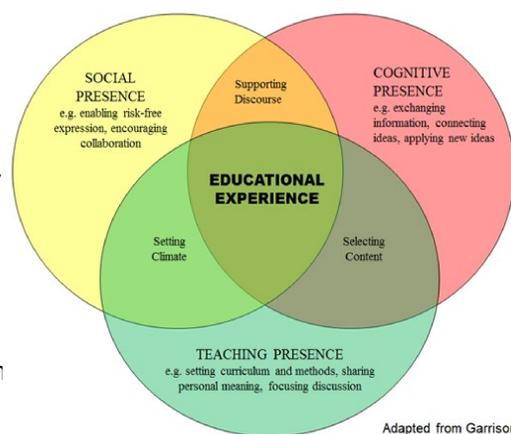


Figure 1. Community of Inquiry model. From the University of Washington - Bothell (n.d.).

Adapted from Garrison and Vaughan (2008)

Research questions

- **RQ1:** Are social presence (SP) and cognitive presence (CP) associated?
- **RQ2:** Is discussion forum format associated with students' social presence and/or cognitive levels-- does a larger proportion of students achieve high SP and/or CP levels depending on forum format?

Methods

- Qual (content analysis), quant (social network analysis; Chi-square, z-test)
- Context: Fully online intro LE course
- Participants: 19 undergrad students
- **n= 486** total discussion posts (257 reply posts)

Findings – RQ1

- Overall Chi-square test for association for SP and CP not significant ($\chi^2 = 0.18, p = 0.67$)
- Discounting anomalies (LF, SR), difference in proportion of high-SP posts in all other large-versus small-group formats was statistically significant ($z = -2.16, p = 0.03$). See Table 1.

	High CP (CP ≥7) all posts	High CP (CP ≥7) response posts	High SP (A>0, C > 0, response ≥2) posts
Large – Consider.it (LC)	0.275	0.333	0.143
Large – LMS (LM)	0.323	0.317	0.210
Large – Flipgrid (LF)	0.337	0.367	0.433
Large total	0.300	0.0331	0.256
Small – Programmatic (SP)	0.505	0.473	0.400
Small - self-select (SS)	0.585	0.652	0.478
Small – random (SR)	0.646	0.565	0.152
Small total	0.568	0.561	0.325

Table 1. Proportions of cognitive and social presence by forum type

Findings – RQ2

- Consistent ties between high-CP and forum type; all large groups = lowest high-CP proportions
- Difference in proportion combined CP scores for all large vs. all small group significant ($z = -5.88, p < 0.001$)
See Figure 2.

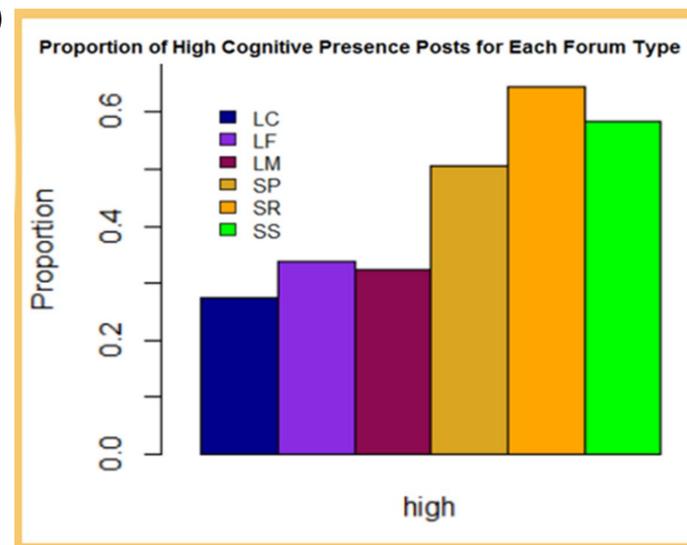


Figure 2. High CP graph by forum

Conclusion

- While RQ1 was inconclusive, 4 of 6 forum types suggest moderate to strong SP–CP association.
- Forum format was associated with CP (RQ2); type of format less important than size (large vs small)
- **Size matters.** Largest proportions of students demonstrated high CP in small groups of any format; some of greatest proportions of high SP scores were in small groups as well
- **Suggestion:** Use of Flipgrid in small groups to enhance SP

Future directions

- Quasi-experimental study focused on small groups: **Does type of small group affect SP and/or CP?**
- Student agency and SP/CP

References

- Akcaoglu, M., & Lee, E. (2016). Increasing social presence in online learning through small group discussions. *International Review of Research in Open and Distributed Learning*, 17(3), 1–17.
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2–3), 87–105.
- Kim, J. (2014). Influence of group size on students' participation in online discussion forums. *Computers & Education*, 62, 123–129.
- Lee, S.M. (2014). The relationships between higher order thinking skills, cognitive density, and social presence in online learning. *The Internet and Higher Education*, 21, 41–52.

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