Predictors of Sense of Belonging to One's Course Community for Online and In-Person Learners

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Abstract: In this survey study, we examined the factors contributing to a sense of belonging to one's course community for college students enrolled in either the online or in-person version of the same introductory statistics course. We found no significant overall difference in online vs. in-person students' sense of belonging to their course community. However, online first-generation college students reported lower belonging to their course community than any other combination of course version and college-generation status.

Introduction

In educational settings, a sense of belonging refers to "the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment" (Goodenow, 1993, p. 80). Research has shown that among college students, a sense of belonging to college settings is associated with important learning outcomes, including engagement, persistence, and well-being (Gopalan & Brady, 2020). Thus, it is paramount that researchers gain a full understanding of the factors that contribute to students' feelings of belonging in college, so that we are positioned to support student success.

Online students, specifically, may struggle to develop a sense of belonging to their course communities, due to the oftentimes lack of real-time, in-person interaction in such settings (Peacock et al., 2020). Nevertheless, few studies have investigated sense of belonging in the context of online learning. For this reason, the present study aims to expand our understanding of how online vs. in-person students of diverse backgrounds experience a sense of belonging to their course community. Our research questions (RQs) are as follows: (1) *Among college students, does course version (online vs. in person) predict sense of belonging to one's course community, holding course grade and demographic characteristics constant?*; and (2) *Among college students, are the associations between course grade and sense of belonging to one's course community, as well as demographic characteristics and sense of belonging to one's course community, moderated by course version?*

Method

Participants and procedure

We employed a cross-sectional survey design that was completed online during the Spring 2022 academic semester. Participants ($N = 327$) were students enrolled in either the in-person ($n = 155$) or online version of a large introductory statistics course taught at a public university in the midwestern United States. We collected data during the last month of the semester, so that participants would have had the chance to establish a sense of belonging to their course community. During the survey, participants completed a four-item measure assessing their sense of belonging to their course community (adapted from Goodenow, 1993; $\alpha = .73$) and provided information on their course version (online vs. in-person), current course grade (out of 100), and demographic characteristics (race/ethnicity, gender, and college-generation status). Participants were compensated with extra credit in the course.

Data analysis

Participants could respond with "Prefer not to say" when providing their grade and demographic characteristics; we estimated missing values for these variables with multiple imputation, creating 50 imputed data sets in total. Next, we used multiple regression to address our RQs. In Model 1, we regressed sense of belonging to one's course community on course version, course grade, and demographic characteristics, thus addressing RQ1. In Model 2, we added interaction terms to examine whether the associations between (a) course grade and belonging and (b) demographic characteristics and belonging were moderated by course version, thus addressing RQ2.

Results

Model 1 explained a significant pooled 13.34% of the variance in sense of belonging to one's course community ($F[8, 318] = 6.12$, $p < .001$). We found a non-significant difference in online and in-person students' reported

degrees of belonging to their course community (B = -0.13, SE = 0.09, p = .14). Additionally, a higher course grade was associated with a significantly higher sense of belonging (B = 0.02, SE = 0.004, p < .001). Also, students identifying as men, on average, reported a significantly lower sense of belonging than students identifying as women or non-binary (B = -0.20, SE = 0.10, p = .047). Finally, students in the "Other race" category reported significantly higher degrees of belonging than students identifying as White (B = 0.68, SE = 0.25, p = .01). No other significant associations were observed in Model 1 (ps > .05).

The change in our pooled R^2 from adding the interaction terms in Model 2 was statistically significant, ΔR^2 = .04, $F(7, 311)$ = 2.23, p = .03. The association between college-generation status and sense of belonging to one's course community was moderated by course version (B = -0.53, SE = 0.52, p = .01). Specifically, online first-generation students experienced lower belonging to their course community than any other combination of college-generation status and course version. No other significant interactions were observed (ps > .05). Figure 1 shows the distribution of our sample's sense of belonging scores by college-generation status and course version.

Figure 1
Distribution of Sense of Belonging Scores by College-Generation Status and Course Version
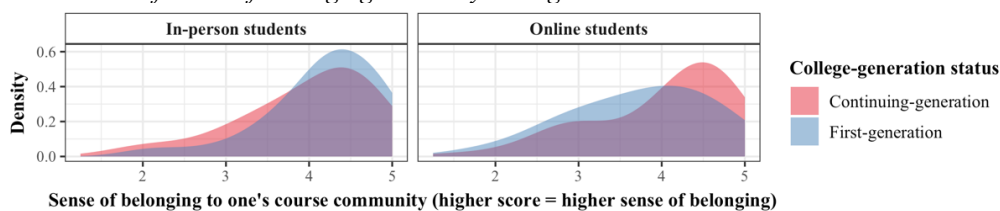
Discussion

In this study, we found that online students do not necessarily experience a lower sense of belonging to their course community than their in-person counterparts. We believe our study's specific course context may have contributed to this finding; the large nature of the class, as well as its lecture-style format, may have limited the amount of in-person interaction available to students enrolled in the in-person version of the course. This lack of in-person interaction, in turn, could have limited in-person students' abilities to develop a sense of belonging above and beyond what was experienced by the online students.

Moreover, although online and in-person students reported similar overall degrees of belonging to their course community, we found that the disparity in feelings of belonging between continuing-generation and first-generation students was significantly larger for students enrolled in the online, compared to the in-person, version of the course. This finding aligns with previous research demonstrating that first-generation college students are often less likely than their continuing-generation counterparts to be socially integrated into their campus community (Stebleton et al., 2014); it is possible that the isolating nature of online learning compounded this sense of isolation for our online first-generation participants, which yielded a lower overall sense of belonging to the course community. This result points to the importance of supporting the academic and social integration of first-generation college students enrolled in online courses.

Overall, our findings suggest that a student's sense of belonging emerges out of multiple intertwined influences that span students' social identities, academic performance, and course context. Future research should continue to account for the ways in which associations between student characteristics and sense of belonging may depend on one's specific course context.

References

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