

How Academic Support Affects Sense of Belonging Among LGBTQ+ Students

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Abstract: *Sense of belonging improves educational outcomes for students, especially for minoritized students, like lesbian, gay, bisexual, transgender, and queer (LGBTQ) students, and sense of belonging is experienced through students' relationships with people on whom they rely for academic support. This study examined the relationship between sense of belonging, gender and sexual identities, and the role that key providers of academic support played for students in college. Students reported a high sense of belonging in their majors, and this experience did not vary much by LGBTQ status or role of academic support provider. LGBTQ students do rely on different people for support, however, which holds implications for how students should cultivate relationships to support their academic success.*

INTRODUCTION

Sense of belonging has long been studied in educational research because of its positive impact on students' experiences, behaviors, and outcomes. A sense of belonging is the extent to which a particular student, or group of students, feels as though they are a part of, or even "stuck to," the greater community (Hurtado & Carter, 1997). Thus a sense of belonging captures a person's perceived cohesion to a larger group, based on their cognitive determination that they do belong to that group, mediated by their affective judgment of whether they feel as though they belong (Bollen & Hoyle, 1990).

One likely source of belonging is academic support, as implied through its impact on academic achievement. For example, positive interactions with faculty help students feel supported, which improves their academic achievement (e.g., Linley et al., 2016). Peer academic

support and parental support have also been shown to relate to achievement as well as academic motivation (Alfaro et al., 2006; Thompson & Mazer, 2009). Freeman et al. (2007) found that academic motivation was positively associated with classroom-level sense of belonging. Additional studies directly linked student support relationships with sense of belonging. Apriceno et al. (2020) found that first year STEM students who had a mentor early in the year reported greater sense of belonging at the end of second semester.

That said, minoritized students have asymmetric access to a sense of belonging which shifts its meaning and value for these students (Vaccaro & Newman, 2016). Sense of belonging implies a notion of social group membership, which asserts that minoritized students can feel belonging without conforming to campus norms by simultaneously holding memberships in campus and social identity groups (Hurtado & Carter, 1997). Further, belonging is especially important for minoritized students such as LGBTQ students because, for these students, it reflects feeling safe and respected in the learning environment (Vaccaro & Newman, 2016). Because minoritized students experience belonging differently from their privileged counterparts, they often report a lower sense of belonging than their peers (Gopalan & Brady, 2019; Rainey et al., 2018). These differences matter as, for LGBTQ students, high sense of belonging can have a protective effect against mental illness and minority stress (Backhaus et al., 2021), whereas a low sense of belonging may lead to reduced academic success and retention rates for LGBTQ students (e.g., Stout & Wright, 2016). Therefore, it is in students', teachers', and administrators' interests to foster a strong sense of belonging in academic settings.

Overall, most of the research on the connection between student support relationships and belonging focus primarily on support from faculty, and almost none of this research has focused on LGBTQ students. Research is needed on the different types of people LGBTQ students rely on for academic support, whether that be faculty, family, or peers, and their relative impact on student belonging. The purpose of this study is to examine the impact of different sources of academic support for LGBTQ students and their sense of belonging. Examining this relationship could shed light on the academic impact of providing a supportive learning environment for LGBTQ students, supporting their persistence in reaching their academic and professional goals. This study extends prior research in particular by examining multiple sources of academic support and comparing their relative impact on belonging.

METHODS

To achieve the purposes of this study, an egocentric social network analysis was performed to understand how the composition of students' support networks influence their sense of belonging in their planned career fields. Social network analysis (SNA) is a research method used to understand how social context shapes individual outcomes (McCarty et al., 2019), and an egocentric approach to SNA examines a subset of a person's social network that is closest to them within a given domain. These data are taken from a project with a broader focus on LGBTQ participation in STEM majors, but the sample includes students across both STEM and non-STEM fields.

The data for this study come from a sample of undergraduate students across two research universities in the western United States, one located in an urban area and the other in a rural area. Of the approximately 450 students who responded to the study invitation, 307 provided complete enough data for inclusion in the analytic sample. Data collection procedures varied at each institution. At one, a random sample of 1000 students was identified and administered the survey, and then the survey was provided to members of LGBTQ affinity groups on that campus to

augment LGBTQ inclusion in the sample. At the other, the survey was distributed broadly through student email listservs, both through the campus LGBTQ affinity networks and through academic departments more broadly. Of the 307 students in the sample, 140 (45.6%) came from the first institution and 167 (54.4%) from the second.

Lesbian, gay, bisexual, and queer (LGBQ) students constituted nearly two-thirds of the sample ($n = 197$, 65%), and nearly one in five participants were transgender, gender nonconforming, or nonbinary (TGNC; $n = 56$, 18%). We disaggregate our results by sexual orientation and gender identity in order to reflect these two distinct, but often interrelated, aspects of identity, and to make sure that the experiences of the numerically smaller group of TGNC students are not erased through being subsumed within the experiences of the numerically larger group of LGBQ students. That said, many students with minoritized gender identities (TGNC) will also have minoritized sexual identities (LGBQ), and vice versa. We use the initialisms LGBQ and TGNC to refer to these two groups of students in accordance with similar usage across the literature (e.g., Haverkamp et al., 2021; Maloy et al., 2022).

Students completed a survey that included sections on social network characteristics, college experiences, personal demographics, and published measures of affective outcomes such as sense of belonging. The social network portion of the survey used an egocentric network name generator where students identified up to three people as sources of academic support; they then provided characteristics of their relationships with and demographics of those people. For this study, we looked at only the first individual identified as a source of academic support, as the first person named in a name generator tends to be a person with whom the participant has a stronger relationship (Marin, 2004). The survey was subjected to cognitive interviews with undergraduate students and expert review as validation prior to administration.

The dependent variable for this study was sense of belonging in one's intended field. This variable is measured through a three-item construct developed by Hurtado and Carter (1997), and further adapted for this study to focus on their intended career fields. Within the analytic sample, the reliability for this construct was high ($\alpha = .88$). To extract the factor, we used promax rotation, an oblique method that allows extracted factors to correlate with each other in estimating the best set of factor loadings. Rotated factor loadings for each item were all higher than .70, well above the typical .40 cutoff for inclusion in a factor.

The primary independent variable is a categorical variable where students identified the role their academic support person held in their relationship with them, such as friend, peer, instructor, parent, advisor, and so on. Other independent variables used for analysis were participants' sexual orientation and gender identity. To ascertain whether the role of named support people related to students' reported sense of belonging, ANOVA tests were used to determine if the mean values for sense of belonging differed by role indicated. To further determine if these differences held between LGBTQ and heterosexual, cisgender students, sexual orientation and gender identity were used as separate factors in two-way ANOVA modeling. Missing data were handled through listwise deletion, which is the most robust method for handling missing data in analysis; in some analyses this process reduced the sample to 289 students, a reduction of about 6% of the sample.

RESULTS

Students tended to report a high sense of belonging within their intended field ($M = 8.7$, $SD = 2.4$; on a range of 2.4-12.2). In looking at the primary network member who provides academic support, the three roles most students named were friends ($n = 84$, 28.9%), faculty or instructors (n

= 53, 18.2%), and parents or guardians ($n = 47$, 16.2%). The full list of roles, their frequencies, and percentages, are provided in Table 1. The ANOVA test for differences in the means of students' belonging factor scores, by role of academic support network member, was not significant ($F[7, 283] = 1.55$, $p = .15$), but the average differed descriptively by role. Those who named classmates or peers reported the highest average sense of belonging ($M = 9.5$, $SD = 2.0$); besides "other," those who named parents or guardians reported the lowest sense of belonging ($M = 8.2$, $SD = 2.2$).

Table 1

Roles of Academic Support Network Members

Role	Freq.	Pct.
Friend	84	28.87
Faculty/instructor	53	18.21
Parent/guardian	47	16.15
Classmate/peer	46	15.81
Advisor	22	7.56
Spouse/partner	9	3.09
Other	8	2.75
Co-worker	6	2.06
Sibling	6	2.06
Other family	4	1.37
Supervisor	4	1.37
Neighbor	2	0.69

Note. The total n reported in this table is 291, as this variable had the highest amount of missing data of all the variables we used in our analyses.

Roles of network members identified by LGBQ students were different from heterosexual students ($\chi^2[7] = 18.2$, $p = .01$). Both groups named friends the most, but heterosexual students named parents second whereas LGBQ students named faculty second and at a rate more than double that of heterosexual students (22.6% versus 9.7%). Heterosexual students also named advisors at nearly three times the rate of LGBQ students (12.6% versus 4.8%). TGNC students did not differ significantly from cisgender students in terms of who they named as academic supports ($\chi^2[7] = 0.7$, $p = .99$), though the greatest descriptive difference between the groups was in how many named parents (cisgender, 16.9%; TGNC 13.5%).

Sense of belonging did not differ between LGBQ students and heterosexual students ($\Delta M = 0.35$; $t[303] = 1.3$, $p = .21$), and it only marginally differed between TGNC students and cisgender students ($\Delta M = 0.61$; $t[303] = 1.8$, $p = .08$). Table 2 presents the mean sense of belonging score by role and sexual orientation or gender identity groups. A two-way ANOVA between LGBQ status and role of identified person, predicting sense of belonging, was also not significant ($F[8] = 1.46$, $p = .17$). The two-way ANOVA between TGNC status and role of identified person, predicting sense of belonging, was marginally significant ($F[8] = 1.7$, $p = .10$); a couple key descriptive differences included sense of belonging for those who named parents (cisgender students, $M = 8.4$; TGNC students, $M = 6.7$) and those who named other family members (cisgender, $M = 8.2$; TGNC, $M = 10.4$). Overall, as sense of belonging tended to be high in value across the sample, and did not vary much, many of the comparisons tested also turned out not to be significant.

Table 2*Average Sense of Belonging Scores by Role and Group*

	Overall	LGBQ	Heterosexual	TGNC	Cisgender
Parent/guardian	8.165	7.850	8.574	6.724	8.438
Other family	8.622	9.054	8.233	10.384	8.152
Classmate/peer	9.522	9.113	10.104	8.247	9.791
Faculty/instructor	8.485	8.611	7.958	9.125	8.332
Friend	8.994	8.961	9.062	8.253	9.168
Advisor	8.740	9.042	8.531	8.552	8.782
Other	7.819	7.729	8.178	5.683	8.256
Workplace	8.915	8.395	10.996	9.774	8.700

Note. Sense of Belonging score, M=8.721 (2.352); Min=2.444, Max=12.218

CONCLUSION

The purpose of this study was to test whether sense of belonging in one's major differed between students on the basis of the role of their primary academic support person and by sexual orientation or gender identity. For the most part, we found little to no differences between students along these lines. These findings are encouraging as we presumed that LGBTQ students experience lower sense of belonging than their heterosexual and cisgender peers. We were also pleased to observe that students reported generally high levels of belonging regardless of the person they identified first in their list of academic support network members. We did note that family members did seem to play a different role in the lives of heterosexual and cisgender students than for their LGBTQ peers, but this finding was not terribly surprising as LGBTQ students' relationships with family members, especially families of origin, can be complicated.

These findings matter because attention to the quality of relationships among students is important for helping foster students' sense of belonging within their intended fields which will fuel their commitment to persisting in their pursuit of their academic and professional goals. That students with a higher sense of belonging list peers as their sources of academic support aligns with previous research that highlight the importance of shared experiences in searching out academic support. Studies also have shown that most students value academic support that tends to their needs for comfort in dealing with stress (Thompson & Mazer, 2009). This type of support is accessed more frequently among peers than other sources of support, such as parents or instructors.

High feelings of belonging likely indicate satisfaction in student academic support systems which means they are meeting these comfort needs. LGBTQ students broadly appear to have very different relationships with family members who other students might rely on as critical supports, and LGBQ students specifically are also a bit more likely to rely on instructor support. This slight increase may be an indication that the quality of relationship with their peers is less than ideal or that there are barriers to shared experiences with peers which make them a less likely source of academic support. Improving intergroup relations on campus, providing professional development for faculty and staff through programs like Safe Zone training, and empowering LGBTQ students to cultivate the support resources they need will help them succeed academically and follow through with their professional goals.

This study was also limited in important ways to acknowledge when reviewing and interpreting the results of our analysis. First, the data only reflect students attending two research universities; other kinds of institutions were not included in the sample. Second, the sample drawn

was not a complete random sample of students; as LGBTQ students constitute a small portion of the overall student body at most institutions of higher education, we used sampling methods that oversampled students in these categories. The data are not assured to be representative of the institutions from which they were drawn, though we did capture a wide range of experiences at each. Third, the statistical relationships presented in the results are only correlational, and not guaranteed to be causal. We cannot conclude that students experience greater sense of belonging because of who they rely on most for academic support, but we can draw conclusions about the meaning of an association of experiencing a higher sense of belonging for students who named support network members who fulfilled specific roles. Finally, although self-reported data are typically the best available data to collect on measures such as sense of belonging, self-reported data are subject to social desirability and recall biases which are common in social science research.

Sense of belonging is an important experience that supports the success of college students in reaching their academic goals. A sense of belonging is especially important for minoritized students, like LGBTQ students, for whom this experience reflects a safe and respectful learning environment. In this study we assessed the differences between LGBTQ students and their peers with respect to how their sense of belonging may differ based on the people in their social networks they rely on most for support. We found that peers mattered most across the board, whereas students differed as to whether they relied more on family or instructors for support. Taken together, the more institutional actors understand the critical role they play in fostering sense of belonging in LGBTQ students, the greater they can support these students in achieving success in college.

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