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Self-Efficacy Buffers Against Belonging Loss for Hispanic Students During the First Semester of College

Maxim Kim
Reed College, USA

Jennifer Henderlong Corpus* 
Reed College, USA

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Abstract: Hispanic college students typically report a lower sense of belonging than their White peers, citing challenges related to first generation student status, low-income family backgrounds, and academic underpreparedness. The present study asked whether Hispanic students would have a lower sense of belonging than non-Hispanic White students and whether academic self-efficacy would be able to provide a greater buffer against belonging loss for Hispanic students compared to their non-Hispanic White peers. The participants of this study were Hispanic (n = 68) and non-Hispanic White (n = 420) first year students at a predominantly White small liberal arts college. Academic self-efficacy was a significant predictor of change in belonging for Hispanic students but not for non-Hispanic White students. These results suggest academic self-efficacy is a worthwhile target of belonging interventions for Hispanic students.

Keywords: *Academic self-efficacy, college transition, first-generation student, sense of belonging.*

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Introduction

The present study focused on belonging among college students of Hispanic or Latino origin – the largest ethnic minority group in the United States (Ennis et al., 2011). It is important to understand the college experience of Hispanic students because they are increasingly attending college but fall behind their non-Hispanic White and Asian peers in graduation rates (Snyder & Dillow, 2015). Hispanic students' sense of belonging may be critical because belonging is one of the most powerful motivators of human behavior (Maslow, 1962; Ryan & Deci, 2020).

Belonging refers to the perception of fit between the self and the local context, which may be especially salient during the transition to college. Inferences about the degree of fit are often based on ambiguous social cues, such as having difficulty understanding a lecture or not being invited to a party. Students then interpret these cues in ways that either affirm (e.g., "everybody has difficulty understanding sometimes") or threaten (e.g., "perhaps I'm not cut out for college") their sense of belonging (Walton & Brady, 2017). These interpretations have important consequences. In a collegiate context, threats to belonging can negatively affect students' academic achievement, retention, and persistence in addition to their mental health and well-being (Freeman et al., 2007; Strayhorn, 2012; Walton & Cohen, 2007, 2011).

Although difficulties in the transition to college are common, students who feel these challenges are unique to themselves or people who share their identity can feel alienated (Walton & Brady, 2017). Generally speaking, students of color, first-generation students, and low-income students tend to experience a lower sense of belonging than their peers from non-marginalized groups, placing them at greater risk for negative academic outcomes (Duran et al., 2020; Johnson et al., 2007; Stebleton et al., 2014). Further challenges arise when these risk factors accumulate, as may be the case for many Hispanic students, who then interpret the common struggles of college as a sign they don't belong.

Hispanic students are more likely than non-Hispanic White students to be the first in their family to attend college (Strayhorn, 2008). Facing a college environment with a culture that can be very different from their own, Hispanic students report having to learn additional coping or navigational skills (Strayhorn, 2012). Sense of belonging may be threatened when students feel that they are not as well connected or informed about college as their peers. Hispanic students are also

* Corresponding author:

Jennifer Henderlong Corpus, Reed College, Portland, USA. ✉ henderlj@reed.edu



more likely to come from a low-income family background and need to work a job while in college, sometimes being the main source of income in their family (Strayhorn, 2012). This added financial burden can create additional pressure to succeed, as well as less time and fewer resources to devote to social opportunities and academics (Nguyen & Herron, 2021). It may also threaten Hispanic students' sense of belonging in that working to support one's family is an uncommon situation for most students at predominantly White institutions. A final concern is that Hispanic students are disproportionately represented among those academically underprepared for the rigor of college courses (National Center for Education Statistics, 2001). Feeling that one struggles on academic tasks that others find easy can further contribute to a feeling that one doesn't belong. Together, these factors relating to family background and academic preparedness create additional academic and social pressures that can threaten Hispanic students' sense of belonging.

Experiences in college, however, can serve to promote Hispanic students' sense of belonging. Positive and frequent interactions with diverse peers increase their sense of belonging, more so than for their non-Hispanic White peers (Johnson et al., 2007; Strayhorn, 2008). At least for continuing-generation Hispanic students, living on campus also has a positive effect on sense of belonging (Duran et al., 2020). Consistent with themes of campus engagement and familiarity, Holloway-Friesen (2021) found that mentored Hispanic graduate students reported increased belonging compared to non-mentored students. Moreover, mentored students also reported higher levels of academic self-efficacy – their belief in their ability to complete academic tasks.

The impact of mentored status, coupled with Hispanic students' weaker preparation for college and broader cultural gap, suggests that self-efficacy may play a critical role in Hispanic students' sense of belonging. The present study explored whether a strong sense of academic self-efficacy could help Hispanic students to interpret events during the transition to college as affirming rather than threatening their sense of belonging.

Why Academic Self-Efficacy?

Academic self-efficacy is defined as a person's belief in their capacity to carry out the tasks necessary to achieve their educational expectations (Bandura, 1997; Chemers et al., 2001; Zimmerman, 2000). Academic self-efficacy is a strong predictor of academic achievement, performance, and motivation (Cassidy, 2012, 2015; Chemers et al., 2001; Zimmerman, 2000). Self-efficacy is powerful, in part, because students with a strong sense of academic self-efficacy take on more difficult and challenging tasks, as well as work harder and persist longer, than those with a lower sense of self-efficacy (Chemers et al., 2001). Self-efficacious students put in more effort because they are confident that their effort will be rewarded, leading to a more calm and thoughtful approach that allows for the use of more effective problem-solving strategies.

The present study was concerned with the relationship between self-efficacy and belonging, which may take several different forms. First, belonging may predict subsequent levels of self-efficacy. A longitudinal study showed that Hong Kong high school students' connectedness to their parents and peers was associated with higher academic self-efficacy one year later (Datu & Yuen, 2020). Similarly, first-year university students' sense of belonging to both the institution and the peer group was associated with increased academic self-efficacy over time, with institutional belonging being the stronger predictor (Sotardi et al., 2022). Together these two studies provide evidence that high levels of belonging may help to build students' sense of self-efficacy.

Academic self-efficacy and belonging have also been linked together as correlated outcomes in several intervention studies. A group of academically at-risk first year college students participated in academic enhancement seminars and experienced increases in both belonging and academic self-efficacy (Wurster et al., 2021). Likewise, Holloway-Friesen (2021) found mentoring to simultaneously enhance both belonging and self-efficacy, with 24% of the variance of students' academic self-efficacy at the end of the study predicted by the combination of mentor effectiveness and its effects on belonging. These studies provide more evidence for the connection between self-efficacy and belonging, suggesting that things which improve belonging may improve academic self-efficacy as well.

An underexplored possibility is that self-efficacy may also predict or influence belonging, which would open new avenues for addressing belonging inequity. There are several ways this may happen. Firstly, the recurring nature of belonging uncertainty can lead students to continue to interpret ambiguous social information as meaning they do not belong (Walton & Brady, 2017). Students who view ambiguous experiences or setbacks as normal and not unique to themselves or people like them will be able to maintain a sense of belonging. Because students high in self-efficacy are more likely to see college experiences as challenges rather than threats (Chemers et al., 2001) and attribute their academic performance to their own effort (Schunk & Usher, 2019), they may be less likely to interpret an event as threatening their sense of belonging. Supporting this reasoning, academic self-efficacy has been shown to be an especially powerful predictor of academic performance under conditions of adversity (Cassidy, 2012). These results suggest that students high in self-efficacy may be better equipped to handle the experiences that might cause them to feel they don't belong.

Another possible way for self-efficacy to influence belonging is by directly addressing concerns about academic underpreparedness. Many studies have affirmed that self-efficacy predicts higher levels of academic achievement, performance, and motivation (Cassidy, 2012, 2015; Chemers et al., 2001; Zimmerman, 2000), and predicts academic performance for Hispanic students in particular (Manzano-Sanchez et al., 2018). In addition to affecting performance, academic self-efficacy also mediates the influence of numerous factors on academic performance for Hispanic students.

For example, internal causality, personal control, parental involvement, and culturally responsive teaching all have been mediated by academic self-efficacy in their positive effect on academic performance (Castro-Villarreal et al., 2014; Chun & Dickson, 2011). How achievement affects students' well-being is also influenced by self-efficacy, with self-efficacy mediating the relationship between academic achievement and depressive symptoms (Zychinski & Polo, 2012). Altogether, then, Hispanic students who are high in self-efficacy are more likely to succeed academically as well as feel better about that success, potentially reducing the belonging uncertainty related to feeling academically underprepared.

The Present Study

The present study investigated self-efficacy as a predictor of belonging over the course of the first semester of college for Hispanic students. Non-Hispanic White students were included as a comparison group, as they represented the majority racial identity at the predominantly White institution where the study was conducted. Consistent with previous research, we expected Hispanic students to report lower levels of belonging than their non-Hispanic White counterparts. This is a replication hypothesis of results found in Johnson et al. (2007) and Duran et al. (2020), which showed that students of color and Hispanic students in particular (Strayhorn, 2008) report lower levels of belonging than their non-Hispanic White peers.

Further, we expected academic self-efficacy to predict change in belonging over the course of the first semester for Hispanic college students, and to do so more powerfully than for non-Hispanic White students. Although previous research has shown that belonging predicts self-efficacy (Datu & Yuen, 2020; Sotardi et al., 2022), the inverse possibility that self-efficacy predicts belonging has not been studied extensively and, if supported, would point to self-efficacy as a worthwhile target for future belonging interventions. Academic self-efficacy was expected to reduce the impact of belonging uncertainty through its association with academic resilience - the likelihood of success despite environmental adversities. We did not expect self-efficacy to have a significant effect on non-Hispanic White students based on findings that students from non-marginalized communities are often less affected by interventions that improve belonging for marginalized students (Gehlbach et al., 2016; Walton & Brady, 2017; Walton & Cohen, 2007). Self-efficacy may not be as beneficial to non-Hispanic White students who don't face the same academic and social pressures as Hispanic students. As a result, when testing for an interaction between self-efficacy and ethnicity, we predicted self-efficacy to have a greater effect on changes in belonging for Hispanic students than for non-Hispanic White students.

Methodology

Participants and Procedure

Data were drawn from the Academic Perceptions Study – a longitudinal study measuring academic motivation, perceptions, and beliefs among several cohorts of first-year students at Reed College who matriculated in Fall 2015, 2016, and 2017 (see Corpus et al., 2020, 2022).[†] For the present study, we used students' reports of self-efficacy and belonging collected during the second week of the fall semester (T1) and reports of belonging collected during the last week of the fall semester (T2). We also drew upon demographic data collected during student orientation. The analytic sample ($n = 488$; 48% female, 44% male) included all students who reported on belonging for at least one of the two timepoints and who identified either as Hispanic ($n = 68$; 14%) or non-Hispanic White ($n = 420$; 86%). Non-Hispanic White was defined as students who identified as White and no other race/ethnicity categories, while Hispanic was defined as students who identified as Hispanic regardless of whether they also identified with additional categories.

Measures

Sense of Belonging: Belonging was measured using four questions from the Collegiate Psychological Sense of Community scale (Lounsbury & DeNeui, 1996). Originally a 14-item scale, the four most relevant items were selected for the purposes of this study: "I really feel like I belong here"; "I wish I had gone to another college instead of this one"; "I feel very attached to this college"; and "There is a real sense of community here". Participants rated each item using a 5-point Likert scale (1 = completely disagree, 5 = completely agree). After reverse-scoring the question about going to another college, the scores were averaged to form a composite, with higher scores indicating a stronger sense of belonging. The scale was internally consistent at both timepoints, T1 $\alpha = .79$, T2 $\alpha = .84$.

Academic Self-Efficacy: The Expectancy for Success subscale of the Motivated Strategies for Learning Questionnaire was used to measure self-efficacy (Pintrich et al., 1991); for previous use with Hispanic populations see Castro-Villarreal et al. (2014) and Zychinski and Polo (2012). Statements were rated using a 7-point Likert scale (1 = not at all true of me, 7 = very true of me). The original items were domain specific and were modified to be domain general for this study (see Table

[†] Research using this same dataset has focused on changes in intrinsic and extrinsic forms of motivation over the first year of college. The present study is unique in its research question and in the particular variables (self-efficacy, belonging, race/ethnic identity) that were the focus of the analysis.

1). One of the original eight items was removed because it referenced grades, which are not commonly reported at Reed College. Internal consistency was strong, $\alpha = .94$.

Table 1. Academic Self-Efficacy Questions

| |
|---|
| I'm certain I can understand the most difficult material presented in the readings this semester. |
| I'm confident I can understand the basic concepts taught in my courses. |
| I'm confident I can understand the most complex material presented by my professors. |
| I'm confident I can do an excellent job on the assignments and tests and in my classes. |
| I expect to do well in my classes. |
| I'm certain I can master the skills being taught in my classes. |
| Considering the difficulty of my courses, the professors, and my skills, I think I will do well. |

Analytic Plan

Prior to testing hypotheses, descriptive statistics for belonging and efficacy for each group of students were calculated, as were correlations between belonging at each time point and self-efficacy. To test the first hypothesis that belonging would differ across student groups, independent *t*-tests were conducted with racial/ethnic identity (Hispanic or non-Hispanic White) as the independent variable and belonging at T1 and T2 as the dependent variables. For the second hypothesis, regression analysis was used to test whether the effect of self-efficacy on changes in belonging would be larger for Hispanic students than for non-Hispanic White students. Belonging at T2 was regressed on belonging at T1, self-efficacy, racial/ethnic identity, and the interaction between self-efficacy and race/ethnicity. Separate regressions for Hispanic and for non-Hispanic White students were then conducted to probe the predictive effect of self-efficacy on belonging for each racial/ethnic group. Scatter and residual plots verified that the measures of belonging and efficacy used satisfied all assumptions of linearity, normality, and homoscedasticity.

Findings/Results

Correlations and descriptive statistics for the full sample are shown in Table 2. Belonging at T1 was strongly positively correlated with belonging at T2 and moderately positively correlated with self-efficacy. Additionally, belonging decreased from T1 to T2, $t(332) = 8.21, p < .001$.

Table 2. Correlations and Descriptive Statistics

| Variable | T1 Belonging | T1 Efficacy | T2 Belonging |
|--------------|--------------|-------------|--------------|
| T1 Efficacy | 0.35*** | — | |
| T2 Belonging | 0.57*** | 0.25*** | — |
| M (SD) | 4.03 (0.70) | 4.99 (1.16) | 3.72 (0.93) |

* $p < .05$, ** $p < .01$, *** $p < .001$

Descriptive statistics by race/ethnicity are presented in Table 3. The first hypothesis of this study was that differences in belonging in the present sample would reflect those shown in the literature, with non-Hispanic White students reporting a stronger sense of belonging than Hispanic students. Although sense of belonging did not differ significantly between groups at T1, $t(456) = 0.65, p = .52$, non-Hispanic White students reported significantly higher belonging at T2 than their Hispanic peers, $t(361) = 2.05, p = .04$. These findings suggest that differences in belonging may emerge over the course of the first semester of college. There were no differences between groups in self-efficacy, $t(452) = -0.87, p = .39$.

Table 3. Descriptive Statistics by Race/Ethnicity

| | | T1 Belonging | T2 Efficacy | T2 Belonging |
|--------------------|--------|--------------|-------------|--------------|
| Non-Hispanic White | M (SD) | 4.04 (0.70) | 4.97 (1.17) | 3.76 (0.92) |
| | n | 395 | 391 | 313 |
| Hispanic | M (SD) | 3.97 (0.76) | 5.10 (1.06) | 3.47 (0.96) |
| | n | 63 | 63 | 50 |

The second hypothesis was that self-efficacy would predict changes in belonging over the first semester of college more strongly for Hispanic than for non-Hispanic White students. Belonging at T2 was therefore regressed on belonging at T1, self-efficacy (mean-centered), race/ethnicity (0 for Non-Hispanic White, 1 for Hispanic), and an efficacy by race/ethnicity interaction variable. As shown in Table 4, both belonging at T1 and race/ethnicity were significant predictors of belonging at T2. There was no main effect of self-efficacy but – most relevant to the hypothesis – the predicted self-efficacy x race/ethnicity interaction was marginally significant ($p = .06$). This interaction was probed by conducting follow-up regressions of the non-Hispanic White and Hispanic samples separately. For each racial/ethnic group, belonging at T2 was regressed on belonging at T1 and self-efficacy, as shown in Table 5. For the non-Hispanic White sample, self-efficacy was

not a significant predictor of belonging, $\beta = .03$, $p = .53$. For the Hispanic sample, however, self-efficacy was a significant predictor of belonging, $\beta = .33$, $p = .02$. Thus, consistent with predictions, self-efficacy had a sizable and significant effect on change in belonging for Hispanic students, but not for non-Hispanic White students.

Table 4. Regression Results Predicting Belonging at T2

| Variable | β | t | p |
|--------------------------------|---------|-------|-------|
| Belonging T1 | 0.55 | 11.65 | <.001 |
| Self-Efficacy | 0.05 | 1.01 | 0.31 |
| Race/Ethnicity* | — | -2.33 | 0.02 |
| Self-Efficacy x Race/Ethnicity | 0.09 | 1.92 | 0.06 |

* β not available for categorical variables

Table 5. Separate Regressions by Race/Ethnicity Results Predicting Belonging at T2

| Variable | | β | t | p |
|--------------------|---------------|---------|-------|-------|
| Non-Hispanic White | Belonging T1 | 0.61 | 12.07 | <.001 |
| | Self-Efficacy | 0.03 | 0.62 | 0.53 |
| Hispanic | Belonging T1 | 0.31 | 2.28 | 0.03 |
| | Self-Efficacy | 0.33 | 2.40 | 0.02 |

Discussion

The present study aimed to investigate whether academic self-efficacy would better predict changes in sense of belonging over the first semester of college for students who identify as Hispanic compared to their Non-Hispanic White peers. As hypothesized, academic self-efficacy significantly predicted changes in belonging for Hispanic students, but not for non-Hispanic White students. The results of this study also replicated previous findings on differences in belonging, with non-Hispanic White students reporting significantly higher average sense of belonging than Hispanic students at the end of the first semester of college.

These results are consistent with findings that show belonging and belonging uncertainty are not as salient to White students as their marginalized peers, leading to less intervention efficacy. For example, Gehlbach et al. (2016) showed that teacher-student relationship quality and student achievement were enhanced when teachers received feedback about things they had in common with their students. This striking effect, however, was almost entirely driven by Hispanic and Black students, with little impact on the relatively more privileged non-Hispanic White and Asian student groups (Gehlbach et al., 2016). Similarly, causing students to believe they had few friends in an academic domain had little effect on White students but lowered belonging for Black students (Walton & Cohen, 2007). In the same study, a positive belonging intervention raised the academic achievement of Black but not White students. It appears both that White students are not as affected by threats to belonging and that belonging is less relevant to White students' success.

The results of the present study are also consistent with findings that demonstrate the benefits of academic self-efficacy for Hispanic students. The interaction between mentoring and sense of belonging predicted higher academic self-efficacy for Hispanic graduate students (Holloway-Friesen, 2021), self-efficacy mediated the influence of sense of belonging (among other factors) on academic performance (Chun & Dickson, 2011), and self-efficacy mediated the relationship between academic achievement and depressive symptoms (Zychinski & Polo, 2012).

Conclusion

Many of the factors that can predict a student's success upon their arrival to college are beyond their control. They cannot change what school they came from, their level of resources, or what hardships they have been through. It is too late to change things like their high school GPA, their standardized test scores, or how much time they devoted to their studies in high school. Despite whatever disadvantages a student may arrive at college with, no student should have to feel that they are incompatible with their institution or that they are incapable of success. Students who identify as Hispanic may arrive at college having experienced many or none of these disadvantages, but the results of this study suggest that academic self-efficacy may come to play a role in whether these disadvantages define a student's college experience. If students can be supported to have genuine confidence in their ability to succeed academically, then students may be able to flourish socially as well, creating a strong sense of belonging that sets the foundation and tone for a fulfilling academic career.

Recommendations

The present findings suggest that belonging interventions targeting Hispanic students may be aided by focusing on improving academic self-efficacy. How might this be accomplished? A robust body of literature has shown that self-efficacy comes from four main sources: mastery experience, vicarious experience, social persuasion, and physiological arousal (Bandura, 1997; Zimmerman, 2000). The more social sources of vicarious experience and social persuasion may be

especially relevant to improving Hispanic students' self-efficacy, in part, due to the collectivist aspect of Hispanic culture that places emphasis on important relationships (Sabogal et al., 1987). Indeed, perceived academic support from mothers, professors, and romantic partners were all predictive of college self-efficacy for Mexican-origin female students (Alfaro et al., 2018). Other research focusing on students from collectivist cultures has found a similar impact of the more social sources of efficacy. Analysis of efficacy beliefs of Indo Canadian immigrant students and Canadian nonimmigrant students found comparisons with others to have greater influence for Indo Canadian students, who had stronger collectivist beliefs (Klassen, 2004). These trends were also partially supported in a study comparing students from the United States with those from more collectivist cultures (Korea and the Philippines). As expected, Filipino students' self-efficacy was best predicted by social persuasion, although Korean and U.S. students did not differ in the impact of vicarious experience and social persuasion (Ahn et al., 2016).

How can vicarious experience and social persuasion be leveraged in increasing self-efficacy for Hispanic students? An important consideration is that similarity to others is a cue for gauging self-efficacy (Schunk et al., 1987). Interventions addressing vicarious experience as a source of self-efficacy might provide models of other Hispanic students or Hispanic faculty who have overcome similar challenges in their college careers. Interventions centered around social persuasion as a source of self-efficacy might encourage and support students in maintaining positive relationships with close family members as well as developing positive relationships with peers. Support in the form of a peer or faculty mentor may also improve self-efficacy, as mentoring has been associated with greater belonging and self-efficacy for Hispanic students (Holloway-Friesen, 2021). Such enhancements to academic self-efficacy for Hispanic students could lead to greater equity in belonging, perhaps ultimately addressing the achievement gap between Hispanic college students and their non-Hispanic White peers.

Limitations

The current study had several limitations. First, the small liberal arts college at which the study took place reduces the applicability of these findings to Hispanic students at large research universities, or other institutions with sufficiently different campus cultures. The student population was also predominantly White, with Hispanic students representing only about 10% of the overall student body. Perhaps with a greater population of Hispanic students the belonging uncertainty of Hispanic students would decrease, reducing the impact of self-efficacy. Future research should address the predictive effect of self-efficacy on belonging at institutions ranging in diversity, particularly with respect to Hispanic representation.

Additionally, while self-efficacy was found to be a significant predictor of belonging for Hispanic students, the interaction of self-efficacy and race/ethnicity had only a marginally significant effect on belonging. This analysis may have been underpowered due to the relatively small sample size of Hispanic students. Future research would benefit from larger samples to determine the true strength of the effect.

The present study was also limited in scope to only the first semester of college. It is unclear how self-efficacy may impact belonging over the course of students' college careers. Past the first semester, the effect of self-efficacy on belonging could plausibly either decrease or increase over time. As time goes on, it is possible that self-efficacy alone may not be enough to counteract the general trend of declining sense of belonging in college. Alternatively, the recursive nature of belonging may lead to compounding positive effects for students high in academic self-efficacy. Students' beliefs about their own sense of belonging lead to behaviors and interpretations that reinforce those beliefs, positive and negative alike (Walton & Brady, 2017). It may be that students who enter college with a strong sense of self-efficacy and belonging use those beliefs as a positive framework for interpreting the rest of their college experience. Future research should investigate the long-term effects of self-efficacy on sense of belonging and whether the findings of this study would have a lasting impact on the course of one's college career.

Ethics Statements

APA ethical standards were followed in all aspects of this research project, which was approved by the Institutional Review Board of Reed College. The participants provided their written informed consent to participate in this study.

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Authorship Contribution Statement

Kim: Conceptualization, design, analysis, writing. Corpus: Editing/reviewing, supervision.

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