An Examination of Factors Predicting College Connectedness During a National Pandemic

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Abstract
The feeling of connectedness with others in society reduces suicide, improves well-being, and enhances effective learning (Jones et al., 2022; Jorgenson et al., 2018). This study examined possible variables contributing to campus connectedness (CC) among students and if such connectedness decreased during the COVID-19 pandemic. We hypothesized that emotional stability, self-efficacy for initiating conversation, extraversion, and participation in an honor society would positively predict CC. We also expected CC scores to decrease due to the COVID-19 pandemic. To test these hypotheses, we distributed an online questionnaire to Orange Coast College students as part of the 2021-22 Psi Beta National Research Project. Measures included Campus Connectedness, Interpersonal Communication Efficacy Scales, and the Ten Item Personality Inventory (TIPI). The project received 1,412 useful responses from community college students nationwide. First, a comparison of CC scores from the current questionnaire and a pre-pandemic survey found a decrease in CC. Next, a multiple regression analysis indicated that all hypothesized variables, except extraversion, were significant predictors for CC, collectively accounting for approximately 15% of CC variability. Further regression analyses revealed that self-efficacy for initiating conversation significantly mediated the relationship between extraversion and CC. Lastly, participation in an honor society significantly increased CC. Based on our findings, colleges may want to find ways to increase campus connectedness by helping students increase their confidence in initiating conversation and encouraging them to participate in honor societies or other campus organizations.

Keywords: connectedness, extraversion, self-efficacy

College connectedness or campus connectedness (CC) is a personal sense of belonging to a college community. More specifically, students’ sense of connectedness to their college involves both the social (e.g., building genuine connections with peers, participating in social groups) and institutional spheres (e.g., perception of support from campus faculty and staff) that influence each other (Jorgenson et al., 2018). For example, students who felt genuine, personal care from faculty and staff reported better institutional support (Jorgenson et al., 2018). CC positively correlates with higher student retention rates, academic success, and student satisfaction (Jorgenson et al., 2018), while it negatively correlates with stress (Samson, 2021). Furthermore, students with higher CC tend to show
better psychological well-being compared to those with lower CC. During the COVID-19 pandemic, high school students who felt close to friends, teachers, or staff members at their schools had significantly lower rates of persistent sadness or hopelessness, suicidal ideation, and suicide attempts than those who felt less connected (Jones et al., 2022). In light of the mental health crisis sparked by the COVID-19 pandemic, with 87% of Gen Z college students reporting increased levels of stress due to their education, identifying possible predictors of CC appears all the timelier and more urgent (APA, 2020).

Self-efficacy for interpersonal communication may be one of the predictors of CC. Self-efficacy is a term coined by Albert Bandura that seeks to agglomerate three key points in human motive behavior: (a) initiation of coping mechanisms, (b) the amount of effort one is willing to distribute, and (c) the longevity of such behavior, even when one faces barriers in positive experience (Bandura, 1977). Expanding on this, competence in interpersonal communication (i.e. the sharing of thoughts, ideas, and feelings between two or more individuals) has been shown to be correlated to self-efficacy (Erozkan, 2013). Extensive research has shown a positive correlation between high levels of self-efficacy and interpersonal communication confidence and competence (Hopf & Colby, 1992).

The personality traits of extraversion and emotional stability may also predict CC. The Big Five Model is the most established personality paradigm today, and it identifies five personality traits (i.e., consistent, individual characteristics), which are as follows: openness, conscientiousness, extraversion, agreeableness, and neuroticism (Shokrkon & Nicoladis, 2021). This study focused on two personality domains – extraversion and emotional stability (i.e. low neuroticism) – because they have been associated with well-being, which is also associated with CC. More specifically, all three components of positive mental health (i.e., emotional, psychological, and social well-being) were found to be positively correlated with extraversion and negatively correlated with neuroticism, even while controlling for demographics (Shokrkon & Nicoladis, 2021). Furthermore, participants who were tested during the pandemic exhibited higher brain activity levels as measured by EEG and reported higher neuroticism levels than those tested pre-pandemic (Rogala et al., 2021).

The purpose of the present research was to analyze and interpret existing results and combine them with current findings on the possible predictive effects of self-efficacy for interpersonal communication, extraversion, emotional stability, and honor society membership on CC. First, this study examined the change in CC scores between the 2010-11 Psi Beta National Research Project research questionnaire and the 2021-22 questionnaire; we predicted a decrease in CC scores during the pandemic. Then, we hypothesized that the following variables would positively predict CC: self-efficacy for initiating conversation, extraversion, emotional stability, and honor society membership. Lastly, we investigated the difference in CC scores between students who participated in an honor society and those who did not; we predicted that CC scores would be lower among nonmembers.

**Method**

**Participants**

This study had 1,412 suitable participants, consisting of 1,008 females, 352 males, 23 non-binary, and 29 people who did not identify with a gender category. The participants were college students with an average age of 24 years ($M = 23.92, SD = 7.99$). The ethnicity of the participants was 544 White/European American, 421 Hispanic/Latino, 188 Asian/Asian-American, 102 mixed race, 78 Black/African American, two Pacific Islander, and eight Native/Indigenous, with 24 people stating that they would rather not say and 45 people indicating the “other” category. There were 178 participants who identified as honor society members and 1,234 participants who identified as a non-member.

The students were from 31 schools throughout the nation, with the highest proportion of
respondents residing in California (47.31%) and studying at Golden West College (14.59%). The study used a convenience sampling technique. Research data were collected from October 10, 2021, to February 15, 2022. The incentive for participants to partake in the study, such as extra credit, was at the discretion of each professor who agreed to distribute the survey link to their students at the various colleges.

Materials
This research study was conducted through a Google Form created by the Psi Beta National Honor Society for their annual research project, with IRB approval from Irvine Valley College. There were nine scales and 121 items measured in the overall study; however, this study only focused on three of the scales. We chose to include Self-Efficacy for Initiating Conversations (Tucker & Rudmann, 2009), College Connectedness Questionnaire (Tucker & Rudmann, 2008), and a ten-item, brief version of the Big Five Inventory (Gosling et al., 2003) since these measures examined variables that could be related to CC or well-being through researching previous literature. Lastly, this study included a question regarding honor society membership – “Are you a member of an honor society (for example, Psi Beta or Phi Theta Kappa)?” The possible responses were “yes,” “no,” or “not sure.”

Procedure
Participants began the experiment by clicking on the link in the Canvas announcement, which took them to a Google Form. Then, they read the informed consent and either agreed to participate or declined and exited the form. After completing all the research questionnaire items and submitting their response, participants were thanked for their participation and exited the Google Form. Since this study was a nonexperimental design and deception was not used, participants were not debriefed upon finishing the survey. At the end of the collection period, the data was exported from the Google Form into an Excel spreadsheet. The statistical software program JASP was utilized to perform a one-sample t-test, Pearson’s correlations, a multiple linear regression, a mediation analysis, and an independent samples t-test (JASP Team, 2022).

Results
First, we ran a one-sample t-test to determine any differences in college connectedness between the 2010-11 Psi Beta National Project survey to this current survey. Participants from this study reported a decrease in college connectedness ($M = 55.12$, $SD = 13.77$) compared to the survey conducted in 2010-11, $t(1411) = -6.629$, $p < .001$. Next, Pearson’s correlations were performed among selected variables (i.e., self-efficacy for initiating conversation, emotional stability, extraversion, and honor society membership) to check for any possible relationships between CC and each selected variable. All hypothesized variables were positively correlated with CC, but self-efficacy for initiating conversation had the highest correlation with CC (see Table 1).

To examine these relationships more closely and see if any of these four variables positively predicted CC, we conducted a multiple regression analysis and found that all four variables collectively accounted for 14.3% of CC variability, $R^2 = 0.143, F(4, 1,407) = 59.906, p < .001$. Self-efficacy for initiating conversation, emotional stability, and honor society membership positively predicted CC. Interestingly, extraversion was not a significant predictor of CC (see Figure 1). Thus, all hypothesized variables, except extraversion, positively predicted CC. To investigate the relationship between extraversion, self-efficacy for initiating conversation, and CC more closely, a mediation analysis was conducted to check for any indirect effects of extraversion on CC through self-efficacy. While extraversion did not directly predict CC ($\beta = 0.016, z = .106, p = 0.92$), it indirectly predicted CC through self-efficacy for initiating conversation ($\beta = 0.966, z = 8.913, p < 0.001$). Self-efficacy for initiating conversation was a total mediating variable of extraversion’s predictive effect on CC ($\beta = 0.982, z = 8.91, p < 0.001$; see Figure 2).
Figure 1

Multiple Regression Path Plot of Campus Connectedness Predictors

Extraversion → \( \beta = 0.011^{**} \)
Self-efficacy → \( \beta = 0.298^{*} \)
Emotional Stability → \( \beta = 0.073^{***} \)
Honor Society → \( \beta = 0.188^{*} \)

Campus Connectedness

Key:

*\( p < .001 \)
**\( p = 0.750 \)
***\( p = 0.004 \)

Figure 2

Mediation Analysis Path Plot of Extraversion, Self-Efficacy for Initiating Conversation, and Campus Connectedness

Self-efficacy

Extraversion → 0.02 → Campus Connectedness

2 → 0.49 → Campus Connectedness
Lastly, the relationship between honor society membership and CC was examined by comparing the means of two independent groups. We performed an independent samples t-test and found that students who reported to be members of an honor society ($M = 62.056, SD = 0.981$) showed significantly higher campus connectedness scores, compared to those who were nonmembers or unsure ($M = 54.120, SD = 0.387$), $t(1,410) = -7.320, p < .001$).

**Discussion**

From our data analyses, we found that all of the measured variables, except for extraversion, were positive predictors of college connectedness. Notably, self-efficacy for initiating conversation was found to be a mediator for extraversion in predicting CC, which suggests that extraverted students do not necessarily feel connected to their campus; rather, they tend to feel a sense of belonging to their college communities through their confidence for initiating conversation. Since self-efficacy for initiating conversation positively predicts CC, introverted students also are more likely to feel a sense of belonging to their college if they feel confident in starting conversations. With a decrease in CC found from the previous 2010-11 Psi Beta National Research Project survey, it seems that focusing on increasing these positive predictors, and thereby enhancing CC, would benefit students and their respective colleges. The strongest predictor, self-efficacy for initiating conversation, could be a good starting point for colleges in order to increase CC to pre-pandemic levels or more. By cultivating and improving students’ confidence in starting conversations with others, CC would theoretically increase; such a link between self-efficacy and CC can be partially corroborated by previous studies that demonstrate the predictive effect of self-efficacy on enhanced social communication (Erozkan, 2013; Boyle et al., 2018) and the association between low self-efficacy and increased perception of social isolation (Isaac et al., 2018). Additionally, this study revealed that CC scores were higher among honor society members compared to nonmembers. Thus, increasing enrollment in honor societies or other student organizations may increase students’ sense of belonging to their college communities; this relationship between honor society participation and increased CC aligns with previous research that suggests how taking part in ethnic student organizations plays a major role in fostering campus connectedness among first-generation college students of color (Azimita et al., 2018) and how participating in student clubs and organizations helps mediate a sense of belonging for college students with psychiatric disorders (Jones et al., 2015). Therefore, by helping students develop confidence for initiating conversations and encouraging them to participate in student organizations, colleges could help increase students’ sense of belonging to the campus community, thereby possibly improving the likelihood for their students to develop or maintain positive mental health, achieve academic success, and complete their college goals.

However, there are some key limitations to this research. First, the method used is a self-report survey, which tends to have reliability issues. Next, the sample distribution is imbalanced demographically in both location (i.e., southern California) and gender: 71.4% of respondents identified as female; 24.9% as male; 1.6% as non-binary; and 2.0% as other. Furthermore, there is an imbalance in majors: 28.5% of students were psychology majors; 10% nursing; 10% undecided; with the next highest being communications (4.2%) and business (4.2%). As the study relied on distribution from the Psi Beta Honors Society, psychology students were more likely to hear about or encounter the study than other students. Another limitation of this study is the lack of breadth for student clubs: the only campus society or club measured in the survey was honor societies, which showed high CC scores. For future research, it would behoove us to examine the relationship between CC and other student organizations and clubs. It may also be interesting to compare technological access (e.g., easy access to reliable internet and electronic devices) and
advancement (e.g., development of new apps, such as Discord) between this study and the 2010-11 survey to examine if such technological factors play a predictive role in college connectedness.

References


JASP Team (2022). *JASP* (Version 0.16.2) [Computer software]. https://jasp-stats.org/


### Appendix

**Table 1**

*Correlations Between Variables of Interest*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>1. Campus Connectedness</td>
<td>1412</td>
<td>55.121</td>
<td>13.772</td>
<td>---</td>
<td></td>
<td></td>
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<tr>
<td>2. Extraversion</td>
<td>1412</td>
<td>7.695</td>
<td>3.200</td>
<td>0.228*</td>
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<tr>
<td>3. Emotional Stability</td>
<td>1412</td>
<td>8.463</td>
<td>2.897</td>
<td>0.141*</td>
<td>0.134*</td>
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<td></td>
</tr>
<tr>
<td>4. Self-efficacy for Initiating Conversation</td>
<td>1412</td>
<td>27.485</td>
<td>9.041</td>
<td>0.325*</td>
<td>0.696*</td>
<td>0.228*</td>
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</tr>
<tr>
<td>5. Honor Society a</td>
<td>1412</td>
<td>1.126</td>
<td>0.332</td>
<td>0.191*</td>
<td>-</td>
<td>-0.001**</td>
<td>-</td>
<td>0.014****</td>
</tr>
</tbody>
</table>

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*a 1 = non-member or unsure and 2 = member. *p < .001. **p < .0001. ***p < .001. ****p < .0001.*