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We examined how different types of interactions affect psychological sense of community among students in living-learning programs. Distinctions were drawn among 3 types of interactions—academic, social, and deeper life—in which students engage with faculty, staff, and peers. Accounting for both the type of interaction and the participants, we found 5 variables that predicted 50% of students' sense of community: academic interactions with peers, social interactions with peers, deeper life interactions with peers, deeper life interactions with faculty/staff, and social interactions with faculty/staff that involve a commitment of time. The results show the meaningful impact that peer interactions have on sense of community. Student interactions with faculty and staff also influence sense of community when they involve time spent together or deal with questions of meaning, value, and purpose. Understanding the impact of interactions on sense of community can help higher education leaders to intentionally design environments that are ultimately conducive to student success.

For decades, student success in college has been linked to student engagement through outcomes such as GPA, academic development, persistence, and graduation rates (Astin, 1993;

Kuh, 2008; Pascarella & Terenzini, 2005; Tinto, 1987). Inherent in Tinto's (1987) institutional departure model and the revisions to this model made by Braxton, Hirschy, and McClendon (2004) is the conceptualization of the college experience as an interactive one—with formal and informal aspects within the academic and social experiences of students. Although distinctive, both of these integrative systems—academic and social—are essential to student success and operate through interactions with faculty, staff, and peers. When institutions help students adequately integrate the academic and social systems on campus, they also help students more fully engage in the community and persist to graduation. As academic leaders increasingly emphasize student success as a key element of strategic enrollment management (Hossler & Bontrager, 2015), difficulty in students' adjustment and transition to college also increases in importance.

PSYCHOLOGICAL SENSE OF COMMUNITY

While much attention has been focused on academic outcomes to predict student success,

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nonacademic indicators are often overlooked. Sarason (1974) developed and helped define *psychological sense of community* as an important factor in human flourishing. McMillan and Chavis (1986) delineated four elements integral for a sense of community: (a) membership, which denotes a feeling of relatedness and a sense of belonging with others; (b) influence, characterized by a mutual sense of mattering among members of the group; (c) integration and fulfillment of needs, which assure members will have what they need through positive behaviors and appropriate allocation of resources; and (d) shared emotional connection, born of a common narrative and experience that is important to the group.

This definition of psychological sense of community integrates the notions of belonging, social integration, and institutional commitment (Schreiner, 2013), all of which parallel conceptually to Tinto's theory of institutional departure (Tinto, 1987, 1993) and related recommendations for the use of communities of learning to socially and academically integrate students (Braxton et al., 2004). Psychological sense of community connects to college success outcomes of interest to administrators and faculty. Brown and Burdsal (2012) found sense of community has a small positive influence on degree completion. Students experiencing a strong psychological sense of community in their living environment reported lower burnout, and a lower level of burnout positively influences GPA (McCarthy, Pretty, & Catano, 1990). Moreover, students' feeling like they belong to their campus community positively influences motivation, with such motivation leading to higher intentions to persist to the next year (Morrow & Ackermann, 2012). Outcomes such as GPA and retention are important, but Schreiner (2013) argued that framing college student success through a positive psychology model and seeking to

understand a student's capacity to thrive in the college environment offers a broader and more integrative lens through which to study and measure student success. Schreiner's (2010, 2013) work on the concept of college student thriving stresses a more holistic approach to student success by elaborating on a student's engagement in the process of learning rather than focusing on academic performance outcomes alone.

Thriving is defined as being "fully engaged intellectually, socially, and emotionally in the college experience" (Schreiner, 2010, p. 4). Students who thrive participate in and have healthy attitudes about the learning process, make connections to instructional material in and outside the classroom, manage time and academic demands, and have meaningful relationships with others while valuing their differences. "Thriving college students not only are academically successful, they also experience a sense of community and a level of psychological well-being that contributes to their persistence to graduation and allows them to gain maximum benefit from being in college" (Schreiner, 2010, p. 4). These factors are significant in determining a student's ability to thrive and can be influenced by intentional educational and programmatic interventions leading to positive academic and social outcomes (Schreiner, 2010, 2013; Schreiner, Louis, & Nelson, 2012; Schreiner, McIntosh, Kalinkewicz, & Cuevas, 2013). Schreiner found psychological sense of community to be the primary contributor to thriving across various types of students, even after controlling for other influences (Schreiner, 2017; Schreiner et al., 2012). Additionally, in two major studies of institutions characterized by high levels of student engagement and success, a prevailing sense of community emerged as a common theme (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Kuh, Schuh, Whitt, & Associates, 1991).

COLLEGE STUDENT INTERACTIONS

Much of students' academic and social integration to the campus is dependent on the interactions cultivated between students and faculty, staff, and peers (Tinto, 1993). In their book, *How College Works*, Chambliss and Takacs (2014) reported that students defined their college experience by the relationships they developed with faculty, staff, and peers. These relationships can be impactful by motivating learning (Chambliss & Takacs, 2014; Komarraju, Musulkin, & Bhattacharya, 2010), strengthening a sense of belonging (Chambliss & Takacs, 2014), and encouraging persistence to graduation (Chambliss & Takacs, 2014; Habley, Bloom, & Robbins, 2012).

Spanning decades of research, studies consistently support the positive effects of different types of student–faculty interactions (Anaya & Cole, 2001; Astin, 1993; Cotten & Wilson, 2006; Kuh & Hu, 2001; Kuh et al., 1991; Pascarella & Terenzini, 2005; Tinto, 1993). Formal interactions, characterized by structured programs and interventions, and informal interactions outside of the classroom are impactful for students, especially those that are substantive or intellectual in nature (Cotten & Wilson, 2006; Endo & Harpel, 1982; Kuh & Hu, 2001; Mara & Mara, 2010; Sriram & McLevain, 2016; Sriram, Shushok, Perkins, & Scales, 2011).

Cotten and Wilson (2007) found that interactions with faculty improved students' sense of community and perceptions about the institution. Both academic and social interactions had an impact, with social interactions offering a foundation on which to forge stronger academic connections. Importantly, students felt a desire to find a “common ground” with faculty before discussing a non-course-related topic and felt more comfortable interacting when faculty

shared more personal information or displayed a sense of humor (p. 504). These types of opportunities for students and faculty to develop closer, more personal interactions seem to foster intellectual curiosity as well as demonstrate faculty approachability and caring to students (Komarraju et al., 2010).

Student–staff interactions are not as well studied in the higher education literature. Scholars include interactions with staff when discussing the overall importance of relationships for student success (Chambliss & Takacs, 2014; Wyckoff, 1998), but few studies specifically address the student–staff relationship. In their study on student–faculty interaction, Umbach and Wawrzynski (2005) found that students sought support from sources other than professors, including staff. Torres (2006) found that Latinx staff played a key role in the retention of Latinx students. Tinto (1998) and others (e.g., Haynes & Janosik, 2012) have noted that learning communities in higher education are an effective intervention because they cause faculty and staff to work together toward student success.

Peer interactions are “the most impressive and consistent findings for any form of interpersonal involvement” (Mayhew, Rockenbach, Bowman, Seifert, & Wolniak, 2016, p. 553). Time spent socializing with friends on campus (Otero, Rivas, & Rivera, 2007) and having high-quality friendships (Wolniak, Mayhew, & Engberg, 2012) both predict higher retention. The number of campus friends, however, does not predict retention (Swenson Goguen, Hiester, & Nordstrom, 2010), indicating that quality of relationships is more important than quantity. Hausmann, Ye, Schofield, and Woods (2009) found that the quality of peer interactions predicted sense of belonging, which in turn positively influenced retention. Having trust in, sharing common interests with, and the extent of conflict with a new

college friend have been associated with GPA and persistence to the second college year (Swenson Goguen et al., 2010).

In a sample of 28 institutions, Fischer (2007) found that informal on-campus ties were positively associated with persistence among Asian American, Black, Latinx, and White students; off-campus ties, however, predicted lower persistence among Black and White students. Generally, learning communities offer an on-campus environment wherein students can have meaningful conversations with faculty, staff, and peers (Brower & Inkelas, 2010; Kuh, 2008; Wawrzynski, Jessup-Anger, Stolz, Helman, & Beaulieu, 2009; Schreiner, 2013). By capitalizing on the integration of the academic and co-curricular experiences of students, living-learning communities facilitate a more personalized approach to student learning by enhancing the academic environment through social conditions cultivated in a residence hall (Inkelas, Jessup-Anger, Benjamin, & Wawrzynski, 2018; Inkelas & Soldner, 2011; Inkelas & Weisman, 2003).

One of the key benefits to living-learning communities is the promotion of peer-to-peer interactions in addition to student–faculty and student–staff interactions (Sriram & Diaz, 2016). Inkelas and Soldner (2011) defined *living-learning communities* as the intentional grouping of students in distinct areas of residence halls with shared academic and cocurricular experiences to foster peer engagement. Students active in LLCs report an engaged learning environment, a sense of belonging, and an opportunity to make greater connections with faculty (Spanierman et al., 2013; Wawrzynski, Madden, & Jensen, 2012). In addition to teaching courses and advising, faculty participating in LLCs have opportunities for more informal interactions with students (Cox & Orehovec, 2007; Inkelas et al., 2018; Wawrzynski & Jessup-Anger, 2010),

and more interactions with faculty produce stronger learning outcomes for students (Cox & Orehovec, 2007; Kuh & Hu, 2001).

DEEPER LIFE INTERACTIONS

Traditionally, researchers examining interactions have used a two-category framework defined by academic goals and social goals (Cotten & Wilson, 2006; Cox & Orehovec, 2007; Kuh & Hu, 2001; Mara & Mara, 2010); however, faculty, staff, and peers interact with and influence students beyond the dichotomous categories. Focusing specifically on the cultivation of a sense of meaning, value, and purpose during the transition to adulthood, Parks (2011) advanced the concept of a *mentoring community*, described as a group that “offers hospitality to the potential of the emerging adult self, poses challenging questions, and provides access to worthy dreams of self and world” (p. 121). Scholars have argued for the importance of this deeply personal facet of college student development, using such terms as *faith* (Parks, 2011), *spirituality* (Astin, Astin, & Lindholm, 2010) and *purpose* (Clydesdale, 2015; Dewitz, Woolsey, & Walsh, 2009; Glanzer, Hill, & Johnson, 2017; Martin, 2000; Sriram, Glanzer, & Allen, 2018).

Scholars have questioned whether the two-category conceptual framework of academic and social integration fully captures the student experience. Interactions that occur around meaning, value, and purpose do not fit into the academic or social category; therefore, a third category is necessary: deeper life interactions (Beckowski & Gebauer, 2018; Sriram et al., 2020; Sriram & McLevain, 2016). Sriram and McLevain (2016) found that this third category of interactions was a valid and reliable construct that was statistically distinct from both academic and social interactions. Other studies of deeper life interactions have yielded

similar findings (Sriram et al., 2020). Although the construct of deeper life interactions is distinct from academic and social interactions, these interactions influence and build upon each other (Beckowski & Gebauer, 2018; Cox and Orehovec, 2007). If psychological sense of community is critical to the college student experience, and if that experience should be described by academic, social, and deeper life interactions with faculty, staff, and students, then a key question is: How do these interactions with these groups influence sense of community in students?

PURPOSE

Based upon Tinto's (1975, 1987, 1993) foundational work on college student retention, scholars in higher education have traditionally bifurcated the student experience into academic integration and social integration. Although Tinto's work has received critique based upon the research of other scholars (e.g., Braxton et al., 2004; Hurtado & Carter, 1997), it remains one of the most widely cited approaches in higher education literature (Milem & Berger, 1997). In their critique of both Spady's (1971) and Tinto's theory of college student departure, Hurtado and Carter (1997) suggested "the need to assess specific forms of students' interaction in college, and perhaps researchers' conceptualizations of integration, by using a conceptually distinct measure that captures the individual's view of whether he or she feels included in the college community" (p. 327). Hurtado and Carter focused their research on Latinx students and their sense of belonging—a primary component of psychological sense of community (McMillan & Chavis, 1986). Their research highlighted the need to pay particular attention to the subjective sense of integration for minority students; therefore, it may be more important to examine students' interactions that are distinct from and influ-

ence integration (Hurtado & Carter, 1997; Sriram & Diaz, 2016).

The purpose of this study was to address three limitations of Tinto's paradigm. First, we focused on student interactions as a precursor to integration. Students interact with three groups on campus: faculty, staff, and student peers. Although researchers have previously examined the importance of these interactions (e.g., Cotten & Wilson, 2006), the three groups are often studied in isolation from one another, and there is little research on student-staff interactions. Second, departing from the traditional bifurcated view of the college student experience (academic and social), we replaced it with a three-category model: academic interactions, social interactions, and deeper life interactions. Previous research shows that deeper life interactions—interactions occurring around meaning, value, and purpose—are distinct from both academic and social interactions and can be validly and reliably measured (Sriram et al., 2020; Sriram & McLevain, 2016). Third, we examined how interactions with these three groups (faculty, staff, and peers) and across these three categories (academic, social, and deeper life) influence the important student outcome variable of psychological sense of community (Hurtado & Carter, 1997; McMillan & Chavis, 1986; Schreiner et al., 2012).

Specifically, with this multi-institutional study we sought to answer the following two research questions within the context of living-learning communities:

- To what extent do academic, social, and deeper life interactions influence psychological sense of community in college students?
- To what extent do students' interactions with faculty, staff, and peers influence psychological sense of community in college students?

METHOD

To address our research questions we conducted a quantitative research study that stems from a postpositivist epistemology, a research philosophy that lends itself toward quantitative research and measurement for acquiring knowledge. We utilized a nonexperimental survey research design for analyzing the relationship among variables without the use of an intervention.

Population, Sample, and Participants

The population of interest for this study was college students who live in living-learning communities at 4-year institutions. We selected this population for two reasons. First, living-learning communities are intended to foster different types of interactions among faculty, staff, and peers (Shushok, Henry, Blalock, & Sriram, 2009; Tinto, 1998). Second, living-learning communities are intended to foster a sense of belonging in students (Inkelas et al., 2018).

In order to make inferences about this population, we administered our instrument to students at 6 institutions, located in 6 states representing the Southwest, Southeast, Midwest, and Northeast regions of the United States: 4 of the institutions were private universities and 2 were public. Three were classified as doctoral universities, and 3 were classified as baccalaureate institutions. The survey was administered by e-mail from a faculty or staff member at each institution to students in multiple residential communities on that campus. Of the 6,761 undergraduate students who received the survey, 1,364 responded at least in part (20.2% response rate), and 951 provided complete responses for data analysis.

The demographic information of study participants is based upon those who chose to provide such information (therefore, totals do

not equal 100%). Participants had a mean age of 19.1 years. First-year students represented 63.2% of those who provided classification information, followed by sophomores (13.9%), juniors (10.5%), and seniors (8.3%). Students who transferred to their current institution made up 2.3% of the respondents. Regarding sex, 24.1% identified as male, 69.9% identified as female, and 0.6% identified as trans. Regarding gender, 24.8% identified as man, 70.2% identified as woman, and 0.2% identified as trans. Those who identified themselves in the LGBTQIA community comprised 10.1% of our respondents. Races and ethnicities represented in the study included American Indian / Alaska Native / Native Hawaiian (0.5%), Asian / Asian American / Pacific Islander / South Asian (8.8%), Black / African American (5.5%), Latinx (6.7%), multiracial/multiethnic (2.9%), White / Caucasian / European American (68.5%), and other (1.6%). International students comprised 2.8% of participants.

Data Collection Instrument

We collected data using The Academic, Social, and Deeper Life Interactions Instrument developed by Sriram et al. (2020). This instrument consisted of 61 items measuring 8 latent variables: academic interactions with faculty, academic interactions with staff, academic interactions with peers, social interaction greetings with faculty/staff, social interaction time with faculty/staff, social interactions with peers, deeper life interactions with faculty/staff, and deeper life interactions with peers. These latent variables were validated by an exploratory factor analysis in previous research (Sriram et al., 2020). To measure the 9th variable, psychological sense of community, we added a 6-item scale, which was adapted from a scale created by Lounsbury and DeNeui (1996).

The Social Interaction Greetings scale

included items measuring to what extent students felt comfortable with casual greetings with faculty or staff. The Social Interaction Time scale included items measuring to what extent students felt comfortable spending time with faculty or staff, such as having lunch or getting coffee. In the validation of the scale, students did not make a distinction in their responses between faculty and staff for social or deeper life interactions, but they did make such a distinction for academic interactions (Sriram et al., 2020).

Each item of the survey representing 1 of these 9 latent variables asked participants to state their level of agreement with a declarative statement using a 6-point Likert-type scale (from *strongly disagree* to *strongly agree*). In summary, the four primary categories of the survey were academic interactions, social interactions, deeper life interactions,

and psychological sense of community. Each of the interaction categories had a separate scale to measure interactions with faculty, interactions with staff, and interactions with peers. See Table 1 for the number of items and examples. Although Sriram et al. (2020) validated the instrument and found it to be reliable, we measured the internal reliability of each scale for this sample by analyzing Cronbach's alpha, with scores above .7 considered acceptable (Sriram, 2017). As Table 1 shows, all scales were reliable with Cronbach's alphas above .9.

Data Analysis

Our research questions pertained to what extent different types of interactions (academic, social, and deeper life) with different groups (faculty, staff, and peers) influence psychological sense of community. Our predictor variables for this

TABLE 1.
Academic, Social, and Deeper Life Interactions Survey Scales

Latent Variable	Number of Items	Example Item	α
Social Interactions With Peers	7	There are other students at my institution I can have fun with.	.93
Social Interaction Greetings With Faculty/Staff	6	I have friendly interactions with faculty at my institution.	.91
Social Interaction Time With Faculty/Staff	4	I would not hesitate to share a meal with staff at my institution.	.92
Academic Interactions With Peers	5	There are other students at my institution I can study with.	.91
Academic Interactions With Faculty	6	There are faculty at my institution I can talk to about classes.	.93
Academic Interactions With Staff	6	Staff at my institution help me to be academically successful.	.96
Deeper Life Interactions With Peers	9	I have discussions with other students that cause me to examine or reflect on my own beliefs or values.	.95
Deeper Life Interactions With Faculty/Staff	18	I feel very comfortable asking faculty for personal advice.	.97
Psychological Sense of Community	6	I really feel like I belong at this university.	.91

TABLE 2.
Means, Standard Deviations, and Intercorrelations for Variables Predicting
Psychological Sense of Community ($p < .001$)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
Psychological Sense of Community	4.71	1.18	.60	.49	.42	.62	.52	.47	.62	.46
1. Social Interactions With Peers	5.29	0.85	—	.57	.39	.71	.54	.44	.69	.36
2. Social Interaction Greetings With Faculty/Staff	5.09	0.84		—	.69	.55	.72	.58	.47	.54
3. Social Interaction Time With Faculty/Staff	4.01	1.27			—	.38	.53	.50	.39	.64
4. Academic Interactions With Peers	5.10	0.92				—	.66	.57	.69	.41
5. Academic Interactions With Faculty	5.11	0.90					—	.69	.55	.51
6. Academic Interactions With Staff	4.85	1.03						—	.48	.55
7. Deeper Life Interactions With Peers	4.71	1.15							—	.57
8. Deep Life Interactions With Faculty/Staff	3.52	1.24								—

study consisted of all 8 interaction variables (see above), and our outcome variable of interest was psychological sense of community.

Before conducting a hierarchical multiple regression, we analyzed the intraclass correlation coefficient (ICC) to determine whether institutional factors had a large effect on psychological sense of community. Results demonstrated much more variation within institutions than among the different institutions in the study ($ICC = .06$), so we proceeded with our regression analysis.

To determine what interaction variables influence psychological sense of community, we entered the predictor variables into the model hierarchically. In Block 1, we included our three social interaction variables: social interaction greetings with faculty/staff, social interaction time with faculty/staff, and social interactions with peers. In Block 2, we entered our three academic interaction variables: academic interactions with faculty, academic interactions with staff, and academic interactions with

peers. Block 3 consisted of our two deeper life interaction variables: deeper life interactions with faculty/staff and deeper life interactions with peers. We chose this order based upon previous research, which has indicated a stronger connection for social integration than with academic integration for psychological sense of community (Johnson et al., 2007; Spanierman et al., 2013). We entered variables related to deeper life interaction last because it is a relatively new concept in the literature (Sriram & McLevain, 2016), and we wanted to know its contribution after accounting for social and academic interactions.

Before analysis, cases with missing data (cases that did not have responses to all items on our scales) were deleted listwise. We also tested for multicollinearity (whether the proposed independent variables are highly collinear). All the variance inflation factor values were less than the threshold value of 10, indicating that multicollinearity was not a problem.

TABLE 3.
Regression Analysis Model Summary for Interaction Variables Predicting
Psychological Sense of Community

Model	<i>R</i>	<i>R</i> ²	adj <i>R</i> ²	ΔR^2	ΔF	<i>p</i>
1. Social Interaction Variables	.64	.41	.41	.41	214.37	.000
2. Academic and Social Interaction Variables	.69	.47	.47	.06	31.79	.000
3. Academic, Social, and Deeper Life Interaction Variables	.70	.50	.49	.03	24.68	.000

RESULTS

To address our research question regarding the influences of types of interactions upon psychological sense of community, we conducted a hierarchical multiple regression with the 8 interaction variables as our predictor variables and psychological sense of community as our outcome variable. Table 2 presents a summary of correlations among all variables used in our analyses.

As shown in Table 3, regression results indicate that all three models are statistically significant predictors of psychological sense of community, and each model improves the prediction at a statistically significant level.

Model 1, featuring only the social interaction predictors, accounted for 41% of psychological sense of community, $R^2 = .41$, adj $R^2 = .40$, $F(3, 914) = 214.37$, $p < .001$. Model 2, which added the academic interaction variables to the social interaction predictors, accounted for 47% of psychological sense of community, $R^2 = .47$, adj $R^2 = .47$, $F(3, 911) = 31.79$, $p < .001$. Model 3, which added deeper life interaction variables to the social and academic interaction predictors, accounted for 50% of psychological sense of community, $R^2 = .50$, adj $R^2 = .49$, $F(2, 909) = 24.68$, $p < .001$; we interpret this as a large effect size (Mayhew et al., 2016). As Table 4 displays, the model

TABLE 4.
Regression Analysis Summary for Interaction Variables Predicting
Psychological Sense of Community

Variable	<i>B</i>	<i>SE B</i>	95% CI	β	<i>t</i>	<i>p</i>
Social Interactions With Peers	.29	.05	[.18, .39]	.21	5.29	.000
Social Interaction Greetings With Faculty/Staff	.01	.06	[-.10, .13]	.01	0.19	.853
Social Interaction Time With Faculty/Staff	.07	.03	[.00, .13]	.07	1.99	.047
Academic Interactions With Peers	.29	.05	[.18, .39]	.22	5.53	.000
Academic Interactions With Faculty	.04	.05	[-.06, .15]	.03	0.76	.446
Academic Interactions With Staff	.06	.04	[-.02, .14]	.05	1.44	.151
Deeper Life Interactions With Peers	.21	.04	[.12, .29]	.20	4.93	.000
Deeper Life Interactions With Faculty/Staff	.08	.04	[.01, .15]	.09	2.31	.021

Note. $R^2 = .50$ ($N = 951$, $p < .001$).

indicates that 5 of the 8 predictor variables with high t values significantly contributed to psychological sense of community (listed in order of impact): academic interactions with peers, social interactions with peers, deeper life interactions with peers, deeper life interactions with faculty/staff, and social interaction time with faculty/staff. Predictors that were not significant in explaining psychological sense of community were social interaction greetings with faculty/staff, academic interactions with faculty, and academic interactions with staff.

DISCUSSION

Since Tinto's (1975) contribution of the terms *academic integration* and *social integration* to the study of college student success, his paradigmatic model has been improved and refined (Braxton et al., 2014), but the two categories have largely remained intact. Sriram and McLevain (2016) and Sriram et al. (2020) have demonstrated that this two-category framework is not adequate, offering the term *deeper life interactions* to capture interactions that occur around meaning, value, and purpose.

The purpose of this study was to add to the empirical research on academic, social, and deeper life interactions. We chose psychological sense of community as our dependent variable because of its direct influence upon college student well-being and success (Schreiner et al., 2012). Thriving college students are not only academically successful, but also have a sense of community that leads to their overall well-being and their persistence to graduation (Schreiner, 2010). Our model demonstrates that a combination of academic, social, and deeper life interactions with faculty, staff, and peers has a large influence upon psychological sense of community.

Implications for Theory

The purpose of theory is to explain complex

phenomena in ways that improve understanding and usability through simplification. As Evans and Guido (2012) explained, theory allows student affairs professionals to predict outcomes, assess practice, and influence outcomes. Theory must deal with two competing goals: parsimony and completeness. In terms of parsimony, theory should consist of helpful simplifications that improve understanding. In terms of completeness, theory should attempt to capture as much of the phenomena as possible without leaving crucial aspects out. Tinto's popular theory of academic and social integration has proven powerful and helpful in understanding the college experience because of its simplicity and usability. If we were to suggest a 10-factor model in place of Tinto's two-factor model, such a model would certainly be more complete but likely less helpful and usable. For example, the revision of Tinto's theory by Braxton et al. (2014) while based upon empirical research is arguably less well known and less used in student affairs practice because of its complexity.

We argue, based upon the findings of this study in conjunction with extant research, that a third factor—deeper life interactions—should be added to Tinto's model of academic and social integration. Doing so would help to capture vital information that is missing from the current two-factor model, while still maintaining helpful simplicity of the theory. There are experiences that college students have around meaning, value, and purpose that are not represented in the concepts of academic and social integration. These deeper life interactions are important for human flourishing and specifically for the development of college students. Other scholars have argued for the importance of meaning, value, and purpose in college student development. Astin, Astin, and Lindholm (2010) called it *spirituality*, Parks (2011) called it *mentorship toward dreams*, and other scholars have called

it *purpose* (Clydesdale, 2015; Glanzer et al., 2017). We use Sriram and McLevain's (2016) term *deeper life interactions* and demonstrate that it is measurable and influential upon the important student outcome of psychological sense of community.

Implications for Practice

The findings of this study have important implications for student affairs professionals, faculty, and other higher education administrators invested in the creation of programs, policies, and places that foster student success. In their empirically based revision of Tinto's theory of student departure, Braxton and colleagues (2004) found that institutions' commitment to student welfare and student psychosocial engagement were two of the most powerful predictors of student persistence. Commitment to student welfare and student psychosocial engagement are both encapsulated by the variable psychological sense of community. As McMillan and Chavis (1986) noted, psychological sense of community is "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). Across multiple studies and multiple campuses, Schreiner has found psychological sense of community to be the greatest contributor to thriving, even after controlling for demographics, involvement levels, and the personality of students (Schreiner, 2017; Schreiner et al., 2012, 2013).

The variables of interest in this study explain 50% of students' psychological sense of community. Social interactions explain 41% of psychological sense of community. Controlling for social interactions, academic interactions explain an additional 6% of psychological sense of community. Controlling for both social and academic interactions, deeper life

interactions explain an additional 3% of psychological sense of community in college students. When analyzing the models as a whole, social interactions are most influential for psychological sense of community, followed by academic interactions and deeper life interactions, respectively.

Analyzing the individual predictor variables in comparison to one another tells a more complex story, however. When examining effect sizes of our predictor variables on psychological sense of community, it is evident that students' interactions with their peers are the most important interactions on campus. The three peer interaction variables were all powerful predictors and relatively much more influential than interactions with faculty and staff. We expected social interactions with peers to have the greatest influence on psychological sense of community, but to our surprise academic interactions with peers emerged as the greatest individual predictor based upon beta weights (although social interactions with peers had only a slightly lower effect size). This finding differs from previous researchers (i.e., Johnson et al., 2007; Spanierman et al., 2013) who found social integration to be a greater influence than academic integration on psychological sense of community. Some of the living-learning communities in our study had students in all four academic classifications living together. This structure of housing—as opposed to only first-year students living together—could be the reason academic interactions with peers had the strongest individual influence on psychological sense of community. If students are living with more seasoned peers who have previously taken similar classes, it could encourage academic mentorship that could then lead to social interactions, deeper life interactions, and a higher sense of community.

The primary implication of this finding for practice is that the most important interaction

campus leaders can help to facilitate for their students' psychological sense of community is academic. This finding certainly confirms the continual emphasis in higher education on living-learning communities (Inkelas et al., 2018). Taking approaches to promote students' academic interactions will benefit not only their academic achievement, but their sense of community as well. Living-learning communities are not the only way to foster this type of peer interaction, however. Offices purposed to promote student success can provide spaces for students to study together and can help students connect with others taking the same classes. More directly related to classes, professors can encourage or require that students study and work on projects together outside of class.

The findings of this study also highlight the importance of social and deeper life interactions among students. Peer mentors, resident assistants, peer tutors, peer orientation leaders, and similar leadership roles can help connect students to one another. Those connections that could be categorized as purely social are also important for students' psychological sense of community. Such social connections may be the necessary precursors to deeper life interactions. Social interactions among students are important in and of themselves, but they could also be helpful in laying the groundwork for deeper life interactions among students. Students connect on a social level or a deeper level with frequent interactions; therefore, higher education leaders could reflect on how to create smaller communities on their campuses that would foster repeated encounters among students.

Frequent encounters are also important when it comes to students interacting with faculty and staff. Previous research revealed that students do not distinguish between faculty and staff in social and deeper life

interactions, but they do make a distinction in academic interactions (Sriram et al., 2020). For the outcome variable of psychological sense of community, only social interactions and deeper life interactions with faculty and staff were statistically significant. The effect sizes were notable and meaningful, even if they were smaller than the peer interactions variables.

The data demonstrate that only those interactions with faculty and staff involving time (e.g., having coffee or a meal together), were influential on psychological sense of community. This does not mean that the social interaction greetings variable was unimportant. Although not statistically significant, social interaction greetings between students and faculty/staff may be a needed precursor before time is spent together in longer conversation. Moreover, social interaction time is necessary in order to provide the opportunity for deeper life interactions, which was also a statistically significant predictor of psychological sense of community.

The overarching implication of the faculty/staff variables is that social and deeper life interactions between students and faculty/staff are important for students' psychological sense of community. The more that can be done at higher education institutions to foster relationships between students and faculty/staff, the better. Student-faculty interaction is well documented in the literature, but the important roles that student affairs professionals and other staff members play in their relationships with students need to be studied further.

By placing attention upon the five significant variables in our model (academic interactions with peers, social interactions with peers, deeper life interactions with peers, deeper life interactions with faculty and staff, and social interaction time with faculty and staff), campus leaders can greatly influence sense of community, which directly connects to student thriving and student persistence.

Implications for Research

The promising findings of this study provide many ideas for future researchers. Although this study was purposefully multi-institutional, including different institutional types from different regions of the US, all of the institutions in this study have predominantly White student bodies. Researchers can specifically examine how interaction variables among Students of Color might differ in predicting psychological sense of community in comparison to White students. Such research is especially important considering Hurtado and Carter's (1997) encouragement to focus on sense of belonging for Students of Color. Do Students of Color on predominantly White campuses experience the same levels of interaction with faculty, staff, and peers as White students? Do Students of Color at Historically Black Colleges and Universities or Hispanic-Serving Institutions experience social, academic, and deeper life interactions differently from those students at predominantly White institutions?

The reason for examining students in living-learning communities is these programs espouse to create many of the variables of interest in this study, such as academic interactions and sense of community. We did not set out to demonstrate the impact of living-learning communities on student outcomes. To examine such impact, researchers can measure student interactions and psychological sense of community with both students who participate in living-learning communities and those who live in traditional housing arrangements and even those who live off campus.

Research on student interactions and desired student outcomes will also benefit from different methodologies than the one used in this study. Our multiple regression provided us with valuable information on how the independent variables of interactions influenced the outcome variable of psycho-

logical sense of community. Other quantitative methodologies, such as structural equation modeling, can determine the indirect effects of these variables on one another. For example, researchers can investigate to what extent social interactions influence academic interactions, or how academic interactions might influence deeper life interactions. Larger samples across more institutions can be analyzed using multilevel modeling to determine the effects of institution type on student interactions and psychological sense of community. In addition, qualitative investigations can provide insight into how students make meaning of different types of interactions with different groups. Qualitative studies can also be used to examine what environmental or programmatic characteristics help to foster these interactions.

Limitations

There are several limitations in this study that should be considered when interpreting results. First, a multiple regression is used to examine relationships that are not necessarily causal. There is reason to expect that the interactions and relationships students experience are what leads to their psychological sense of community, based on previous research (Hurtado & Carter, 1997; Johnson et al., 2007; McMillan & Chavis, 1986; Spanierman et al., 2013). Even though we intended to reveal variables that influence psychological sense of community, the relationship can work in both directions with psychological sense of community influencing the predictor variables.

Second, any attempt to measure latent variables is a limitation. While a postpositivist epistemology acknowledges this limitation, it does not resolve it. Specifically, despite the demonstrated validity and reliability of the scales used in this study, the true score of a latent variable for any student cannot be assessed (Sriram, 2017). Although the scales used are valid and demonstrate excellent reliability, the

outcomes rely upon self-reports; therefore, it is possible that participants did not provide accurate information about themselves or their views. A third limitation of this study is that the people who chose to participate could be different from nonresponders in unknown ways.

CONCLUSION

We examined how different types of interactions with different groups affect students' psychological sense of community. In researching the three unique interactions—academic, social, and deeper life—with faculty, staff, and peers, we found that students' sense

of community was impacted significantly by academic interactions with peers, social interactions with peers, deeper life interactions with peers, deeper life interactions with faculty/staff, and social interaction time with faculty/staff. Understanding both the impact of interactions on sense of community and the weight of different interactions can help higher education leaders to intentionally design environments conducive to fostering these types of interactions for student success.

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