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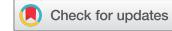


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Thriving Through Interactions: Investigating How Distinct Relationships Influence College Student Success

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Although decades of research demonstrate the value of interactions in college, scholars have yet to explore how distinct interactions with faculty, staff, and peers predict holistic outcomes. This study explored such relationships through an ecological lens, demonstrating that academic, social, and deeper life interactions uniquely influence thriving factors. Utilizing the results and recommendations from this study, student affairs professionals will be more equipped to support students and design programs that maximize connections leading to success.

The college student experience is often captured by research focused on the social and academic domains of students' lives. Tinto's (1975) influential work, and the plethora of studies that ensued, helped drive the notion that a college experience is primarily explained within these two domains. Although numerous scholars have offered revisions to Tinto's work (Braxton et al., 2013; J.B. Berger & Braxton, 1998; Metz, 2004), Tinto's original conceptualization still holds a paradigmatic status in research. Nonetheless, when considering how and where student affairs leaders support students' success, it is important to extend this thinking beyond the academic and social domains articulated by Tinto and others.

Bronfenbrenner's (1977) research on the ecology of human development offers an alternative to expand the conceptualization of a college experience beyond two limited domains. Applying an ecological paradigm to person-environment interaction allows researchers to "exert influence on the course and content of subsequent psychological developments in all spheres" (Bronfenbrenner, 1993, p. 10). As the college experience is historically bifurcated into two main spheres (academic and social), existing theories on student success also typically address these two spheres. Schreiner et al. (2020) offer thriving—optimal functioning in the academic, social, and intrapersonal domains of a student's life—as a way to measure and discuss success in a more holistic manner. Thriving students flourish in each of these three domains. Such emerging theories take into consideration the nested systems of Bronfenbrenner's (1993) model, accounting for networks that construct a student's ecology.

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As measures of success are expanding, measures of student interaction also need to be depicted in ways that represent more than a traditional two-sphere approach. Scholars have recently expanded the research on interactions to go beyond academic and social domains to include “deeper life” interactions, or connections that occur around meaning, value, and purpose (Sriram, Haynes, Cheatle et al., 2020). By weaving together expanded theories of student success and extended measures of student interactions through the lens of an ecological framework, the current study explored how students thrive through interactions and offers creative strategies for student affairs professionals to bolster success on campus.

Purpose and Significance of the Study

Knowing there is “real value” in student interactions (Cole & Griffin, 2013, p. 599), the current study provided evidence to help college faculty, staff, and administrators further understand how different student interactions influence different aspects of success. Such understanding is imperative for planning programs and policies that maximize the processes leading to student flourishing. Equipped with this knowledge, faculty and student affairs administrators can make more informed decisions when structuring campus environments and programs. By focusing on thriving as a central measure of success, this study utilized a framework for exploring the beliefs students hold regarding their academic selves, interpersonal relationships, and personal well-being. As colleges continue to cultivate learning environments that blend in-class and out-of-class experiences in an attempt to foster success (Cook & Lewis, 2007), this project examined the role of student interactions and their predictive ability for these outcomes.

Kinzie and Kuh (2017) noted that although there is a rich, still-growing body of research and practice for advancing students’ success in college, to realize the highest levels of student success, higher education institutions need more “know how.” Clearly defining how certain campus environmental factors contribute to this success helps to close this gap. If faculty and administrators can confidently promote environments that not only lead to certain interactions but also have evidence of how these interactions influence factors of student thriving, then the impetus for providing such environments rests in more than mere anecdotal accounts of popular programs and campus spaces (e.g., success centers, mentor programs, student organizations centers).

Thriving as a Holistic Measure of Student Success

Thriving was developed in an effort to more holistically examine student success (Schreiner, 2010a). The concept argues that while grades and graduation are important, they are insufficient measures of a truly successful experience. Thriving students experience optimal functioning in three areas that contribute to success and persistence: (a) academic engagement and performance, (b) interpersonal relationships, and (c) intrapersonal well-being. In other words, students who thrive are fully engaged in the college endeavor—intellectually, socially, and emotionally (Schreiner et al., 2009).

Thriving is rooted in the field of positive psychology (Seligman & Csikszentmihalyi, 2000) and primarily derives from the construct of flourishing (Keyes & Haidt, 2003). Defined as optimal psychological and social functioning, flourishing individuals engage life with a sense of purpose and meaning (Seligman, 2011). This lies in direct opposition to languishing, or a state in which an individual is devoid of positive emotion toward life and is not functioning well psychologically or socially (Keyes, 2003). In turn, thriving implies a form of success that is more than merely surviving in the college environment until graduation. Thriving denotes that

students exhibit a growth mindset (Dweck, 2006) and resiliently learn to attribute their failure to a lack of effort or to effort expended on the wrong tasks. It likewise indicates that students believe their grit and determination (Duckworth, 2016) in multiple areas of their life can impact not only their persistence toward degree completion but also general success in life (Schreiner, 2010b; Schreiner et al., 2009).

Thriving conveys that students are fully engaged in the three areas mentioned above, which are represented through five factors: engaged learning, academic determination, social connectedness, diverse citizenship, and positive perspective. Such outcomes often stem from the relationships students form in college. Examining student interactions is necessary for improving strategies to help students thrive.

Types of Interactions and Their Role in Student Success

Student interactions define the college experience and serve as essential contributors to students' success in college (Chambliss & Takacs, 2014). Most research regarding student interactions has focused on student-faculty interactions (Kuh & Hu, 2001; Sriram & McLevain, 2016) or student-peer interactions (Astin, 1993; J. B. Berger & Milem, 1999). Although these interactions are essential, student-staff interactions likewise have the potential to impact success in meaningful ways. Wyckoff (1998) suggested that interaction with various groups, including staff and administrators, can influence a student's intent to remain at the university. Demetriou and Schmitz-Sciborski (2011) further linked student-staff interactions to success by noting how the interactions students have on campus with individuals in support services "can influence a students' sense of connection to the college or university as well as their ability to navigate the campus culture, meet expectations, and graduate" (p. 4). It is clear that the impact of students' interactions should not be limited to exchanges between one or two groups but should be examined through a more comprehensive framework.

In addition to approaching interactions within a wider scope regarding the individuals involved, it is also important to categorize the types of interactions that occur. Drawing from Tinto's (1975) original framework, studies often emphasize interaction as occurring only within traditional academic or social categories (Benjamin & Griffin, 2013; Kuh & Hu, 2001; Mara & Mara, 2010). More recently, however, scholars have identified a third and central point of interaction: deeper life interactions (Sriram & McLevain, 2016). These interactions are descriptive of the encounters students have that reflect a level of engagement "on a more personal level that prompt critical thinking about meaning, value, and purpose" (Sriram, Haynes, Weintraub, et al., 2020, p. 1). Such discussions can include relationships, meaning making, calling, spirituality, and navigating personal crises. Multiple studies with different student populations demonstrate that deeper life interaction is a valid and reliable latent variable that is distinct from social or academic interaction (Beckowski & Gebauer, 2018; Sriram, Weintraub, et al., 2020; Sriram, Haynes, Cheatle et al., 2020; Sriram, Haynes, Weintraub, et al., 2020; Sriram & McLevain, 2016).

Conceptual Framework

Utilizing an ecological model of human development, the current study positioned the interactions students have with various individuals within different socially organized subsystems. An ecological model is helpful in capturing the areas of a student's life wherein such interactions manifest and influence the three distinct thriving domains (academic, interpersonal, intrapersonal). Bronfenbrenner (1994) argued that to understand human development, one must consider

the entire ecological system in which growth occurs. In Bronfenbrenner's paradigm, "an individual interacts within ever more complex spheres of relationships, each of which is integral to development" (Renn & Arnold, 2003, p. 267).

Within the ecological system framework for this study, students' interactions and their success in various domains represented a set of nested structures, each inside another (Bronfenbrenner, 1994). From this perspective, students have academic, social, and deeper life interactions with faculty, staff, and peers primarily in their microsystems, mesosystems, and exosystems, yet the outcomes and effects of such interactions can also stretch across time and structures into the macrosystem. Although students arrive at college with background characteristics (e.g., high school GPA, race, socioeconomic status) that precondition their experience, we focused primarily on environment-to-outcome relationships in the current study. Pascarella and Terenzini (2005) stressed the importance of what happens to students *after* they enroll in college, and Terenzini et al. (2010) stated that "once students enroll, their college outcomes are shaped primarily by their individual curricular, classroom, and out-of-class experiences" (p. 5).

By situating the variables of this study within an ecological framework, student interactions constitute an environmental experience that we conceptualized to influence various desired success outcomes in different subsystems of a student's life and college experience. This conceptual approach is represented by the *types* of interactions for students and *with whom* students interact. Though studying different types of interactions helped us theorize about their significance, investigating the constituents with whom these interactions occur added additional understanding. By setting apart the parties involved in students' interactions, a more detailed awareness can emerge around the influence of interactions. As success is often a confounded variable implying a variety of features (such as GPA or persistence), assessing the five factors of thriving allowed the current study to determine how well distinct student interactions inform an approach to success that considers Bronfenbrenner's (1993) ecological subsystems. Figure 1 visually represents this conceptual framework for the current study.

Research Questions

This study researched the various interactions of college students. These interactions were quantified to predict thriving and its five interrelated factors. Participants were members of a living–learning community (LLC) on their respective campus. This study aimed to supplement existing research by focusing on the interactions often facilitated by a living–learning experience and on the "*with whom?*" and "*what kind?*" types of questions. This was done through the research questions involving how academic, social, and deeper life interactions with peers, faculty, and staff influence thriving for college students.

Methodology

We utilized a nonexperimental design for this study to examine the relationships among variables and their underlying structure (Sriram, 2017). Our postpositivist epistemology assumed that data and evidence shape the construction of knowledge, that causal relationships determine the outcomes of knowledge, and that efforts for objectivity are essential to inquiry. Further understanding of the relationships among the variables in this study offers deeper insight into the processes for promoting student success. To examine such relationships, structural equation modeling (SEM) was applied. Blunch (2013) described SEM as a collection of tools for exploring the unique connections between various concepts in specific cases. Utilizing SEM is advantageous due to its ability to assess indirect effects, control for parameter invariance across

groups, and confirm validity and reduce measurement error in using scores from latent construct scales (Inkelas & Soldner, 2011).

Population and Sample

This study utilized data from undergraduate students at eight large (5,000+ students) research universities. Seven of the institutions were public, and one was private. All participants resided in an on-campus-living-learning community (LLC) when data were collected in fall 2019. The interactions measured were not limited to those happening within students' residential environments. As LLCs heavily promote interactions, data from these students allowed for a robust understanding of the unique ways various interactions influence measures of success.

We solicited student affairs colleagues who work with LLCs to distribute the survey to students on their campus. From this convenience-sampling approach, participants were asked to complete an online survey via e-mail. Within the utilized ($N = 4,864$) population, 1,322 students returned survey data, a 27.2% response rate. Per SEM requirements, complete data were needed for all variables. The returned data set was reduced to 1,098 cases due to nonresponse wherein no items were answered (i.e., survey closed after informed consent page or the first page of questions). An additional 121 cases were removed because respondents did not answer enough items to warrant inclusion, leaving all scales for an entire instrument unanswered. This omission was necessary because missingness procedures would introduce an inappropriate amount of bias if included. This resulted in $n = 977$ cases with sufficient responses to suitably impute missingness while maintaining confidence intervals and appropriately preserving Type I error rate.

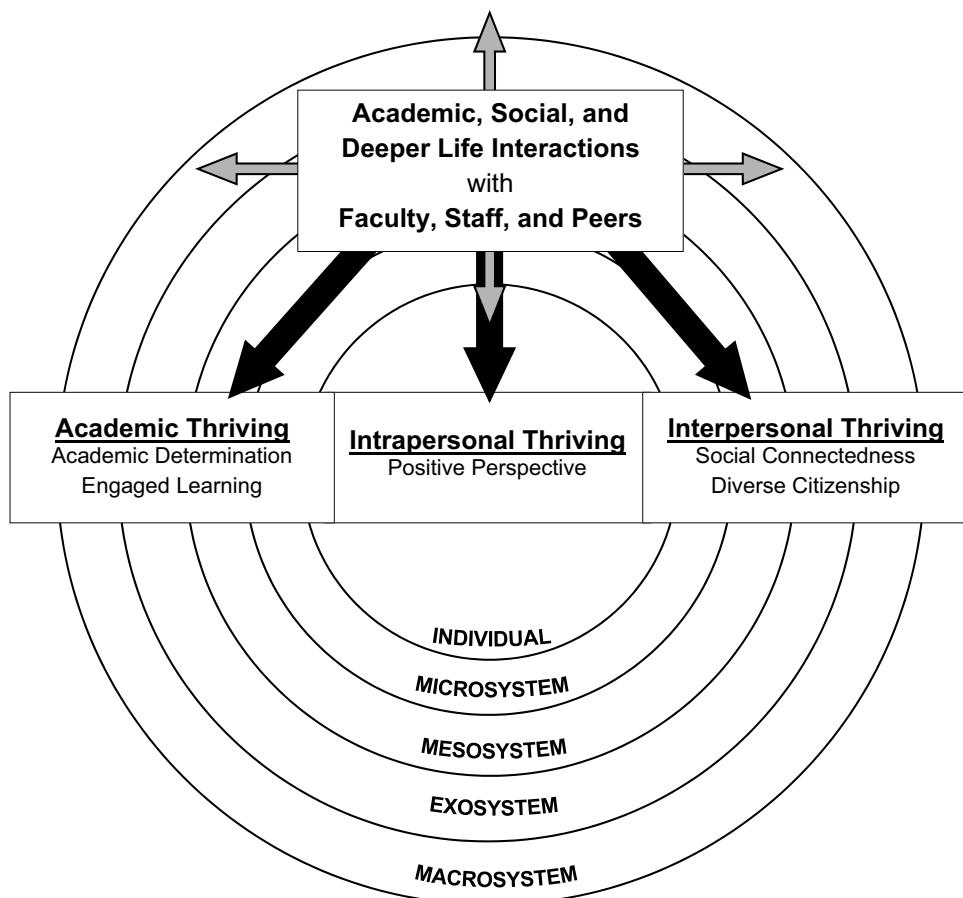
A Little's missing completely at random (MCAR) test indicated that data were missing at random. However, an SPSS pattern analysis verified slight monotonicity correlated between missingness and item location (i.e., survey fatigue with items toward the end). Missing data could then be classified as missing at random (MAR), which indicated a systematic relationship between the propensity of missing values and the observed data, but not the missing data. Expectation maximization (EM), a maximum-likelihood-based missing data algorithm was then applied to account for missingness. Finally, through examining Mahalanobis distance and z scores concerning outliers and normality assumptions, an additional 74 cases were removed.

Although these processes reduced the usable data, they were important to eliminate bias and reduce errors in our methodological procedures. The result was 903 complete cases available for the final analysis. **Table 1** summarizes the demographic characteristics of the final sample.

Instrumentation

We examined student interactions using a series of scales created by Sriram, Haynes, Cheatle, et al. (2020), which were conceptually derived from the work of Sriram and McLevain (2016). Collectively referred to as the *Academic, Social, and Deeper Life Interactions Instrument*, each scale measures students' perception of their interactions with different constituents by asking participants to rate their level of agreement with a declarative item through a 6-point Likert-type scale. Within each interaction category of the instrument (academic, social, deeper life), distinct scales measure perceptions of interactions with three unique constituent groups: peers, faculty, and staff. Through an exploratory factor analysis, Sriram, Haynes, Cheatle, et al. (2020) culled the original list of variables down to the following eight valid factors: academic interactions with peers, academic interactions with faculty, academic interactions with staff, social interactions with peers, social interactions—greetings with faculty/staff, social

Figure 1. Conceptual framework.



interactions—time with faculty/staff, deeper life interactions with peers, and deeper life interactions with faculty/staff.

We measured thriving with the *Thriving Quotient* (Schreiner, 2010a), a 24-item measure with strong internal reliability ($\alpha = .89$) that assesses cognitive, behavioral, and psychosocial components through a series of Likert scales. These scales assess students' academic engagement, psychological well-being, and interpersonal relationships that are predictive of their further success and persistence (Schreiner et al., 2009). Thriving was the central dependent variable, but this study focused on the five thriving factors (instead of an overall thriving score), which include engaged learning, academic determination, social connectedness, diverse citizenship, and positive perspective.

Data Analysis

Reliability estimates for each scale on the thriving and interactions measurements were as follows: engaged learning (4 items, $\alpha = .89$), academic determination (6 items, $\alpha = .88$), social connectedness (6 items, $\alpha = .87$), diverse citizenship (6 items, $\alpha = .84$), positive perspective (2

items, $\alpha = .88$), academic interactions with peers (4 items, $\alpha = .90$), academic interactions with faculty (4 items, $\alpha = .90$), academic interactions with staff (4 items, $\alpha = .94$), social interactions with peers (3 items, $\alpha = .94$), social interactions—greetings with faculty/staff (3 items, $\alpha = .80$), social interactions—time with faculty/staff (2 items, $\alpha = .88$), deeper life interactions with peers (4 items, $\alpha = .92$), and deeper life interactions with faculty/staff (4 items, $\alpha = .90$).

After confirming reliability, we executed our analysis in two stages. The first stage involved construction of measurement models to appraise the integrity of all latent variables. This step allowed verification that the indicator variables accurately represented the theoretical constructs measured in the final model. The second stage employed SEM to measure the extent of confirmability between the collected data and a proposed (hypothesized) model. This was accomplished through an assessment of regression pathways quantifying the strength of relationship between interactions and thriving factors.

Based on theoretical connections from our review of the literature, we developed an initial model with the hypothetical connections that estimated statistically significant predictive

Table 1

Demographic Characteristics of Final Data Set (N = 903)^a

Variable	Number	Total %
Gender		
Male	220	28.1%
Female	550	70.3%
Trans	1	0.1%
Prefer not to answer	11	1.4%
Classification		
First-year	579	73.9%
Sophomore	125	15.9%
Junior	49	6.3%
Senior	30	3.8%
Race/ ethnicity		
American Indian/Alaska Native/Native Hawaiian	8	1.0%
Asian/Asian American/Pacific Islander/ South Asian	77	9.8%
Black/African American	49	6.3%
Hispanic/Latino(a)(x)	82	10.5%
Multiracial/multiethnic	42	5.4%
White	505	64.4%
Other and no answer	21	2.7%
First-generation student		
First-generation student	116	14.8%

^aBased on participant information provided; therefore, not all totals sum to 100%.

relationships among variables. The model represents how particular types of interactions with certain individuals might significantly influence second-order factors of thriving (engaged learning, academic determination, social connectedness, diverse citizenship, and positive perspective). These outcomes were measured separately to more fully understand the nuances associated with the relationships among variables.

Results

In the sections below, we discuss specific results for each of analytical procedures used in the current study.

Confirmatory Factor Analyses

We assessed measurement models through confirmatory factor analysis (CFA) procedures, which helped verify that all latent constructs measured what they intended to measure. All variables demonstrated validity and reliability measured through previous research (Schreiner et al., 2009; Sriram, Haynes, Cheatle et al., 2020). However, the CFA method allowed us to confirm that these constructs met the level of statistical viability needed for inclusion in a structural model. We performed these procedures using AMOS (Version 26) modeling software. After confirming thriving as a first-order construct, a five-factor model was tested to confirm thriving as a second-order factor. We then tested all interaction variables through individual CFA procedures. Goodness-of-fit for all CFAs demonstrated excellent fit at the CFI > .95 and RMSEA <.06 thresholds (Byrne, 2016).

Structural Equation Modeling

Using AMOS 26 modeling features, we mapped the screened data ($n = 903$) onto the hypothesized structural model within their respective variables. The initial analysis of this model produced a substandard fit. After assessing regression and covariance pathways for significance ($\phi < .05$) and sequentially removing nonsignificant pathways in conjunction with our theoretical interpretations, we consulted modification indices to explore additional options. The strongest indices proposed regressing the five thriving factors onto one another in a structured way. These changes were theoretically supported, as the five factors are conceptual underpinnings of the thriving construct. Adding these paths allowed certain thriving factors to mediate between interaction variables and other factors. This allowed indirect effects to be included as part of the results and more fully utilized the SEM process. After these revisions, the final structural model was enhanced and remained parsimonious based on satisfactory fit indices ($\chi^2 = 3147.083$ ($df = 1195$, $p < .001$), CFI = .946, RMSEA = .043). The final model is represented in Figure 2.

Table 2 presents squared multiple correlations (R^2) for the model, which correspond to the percentage of variance in the thriving construct explained by interactions. Factor loadings from indicators onto latent constructs in the SEM were all above an adequate threshold ($> .45$). Direct, indirect, and total effects (path coefficients) of the model were calculated as standardized beta weights. For effect-size thresholds, recommendations for higher education research from Mayhew et al. (2016) were used: .06 as small, .12 as medium, and .20 as large. Results from the final model yielded many significant effects. With so many significant pathways in the model, deciphering the importance of these effects posed a challenge. For clearer interpretation of the most meaningful variable relationships related to our research questions, Table 3 summarizes the strongest model contributions as standardized total effects of the interaction variables for each thriving factor.

Figure 2. Final full structural equation model of five thriving factors.

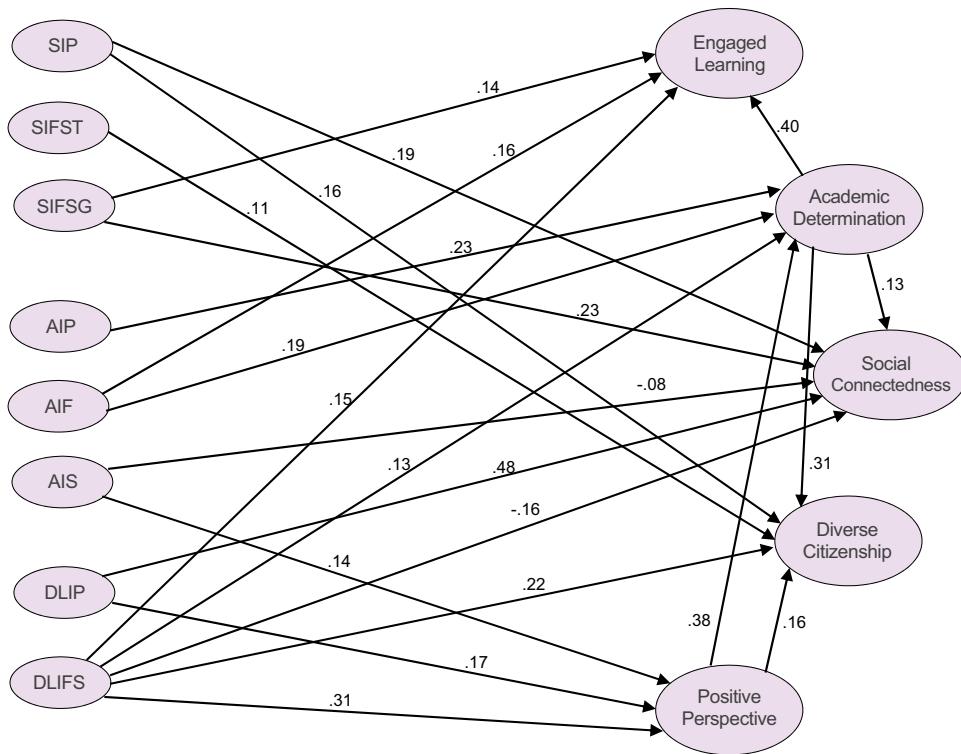


Table 2

Squared Multiple Correlation (R^2) of Final SEM

Variable	Estimate
Engaged learning	.51
Academic determination	.51
Social connectedness	.47
Diverse citizenship	.54
Positive perspective	.28

MIMIC Model

To further understand the strength of interactions on thriving, we conducted additional post hoc analyses through a multiple indicators–multiple causes (MIMIC) model (Jöreskog & Goldberger, 1975). This involves using latent variables that are predicted by observed variables (Schumacker & Lomax, 2004). We specified a measurement model by transforming the thriving factors into observed variables through mean (composite) scores. We then regressed the latent thriving variable on the three interaction groupings. After sequentially covarying three sets of error terms, the model produced satisfactory goodness-of-fit ($\chi^2 = 56.989$ ($df = 14$, $p < .001$),

Table 3

Summary of Strongest Interaction Contributions in Final SEM

Exogenous Variable	Standardized Total Effect
Engaged learning	
Academic interactions with faculty	.24
Deeper life interactions with faculty/staff	.25
Academic determination	
Academic interactions with peers	.23
academic interactions with faculty	.19
Deeper life interactions with faculty/staff	.25
Social connectedness	
Social interactions with peers	.19
Social interactions—greetings with faculty/staff	.23
Deeper life interactions with peers	.49
Diverse citizenship	
Deeper life interactions with faculty/staff	.35
Positive perspective	
Deeper life interactions with peers	.17
Deeper life interactions with faculty/staff	.31

Table 4

MIMIC Model Standardized Path Coefficients

Composite General Interaction Indicator Variable	Estimate
Social	.21
Academic	.29
Deeper life	.44

CFI = .986, RMSEA = .058). All pathways were significant ($p < .001$) and are summarized in Table 4. Overall, interactions collectively accounted for 66.2% of the variance in student thriving.

Discussion

The final model developed from this study explained 51% of the variance in engaged learning. Academic interactions with faculty had a large total effect on engaged learning ($\beta = .24$). Deeper life interactions with faculty and staff demonstrated stronger total effects ($\beta = .25$). The connections students make with professors and administrators regarding their purpose and meaning is a strong motivator for learning. This model demonstrates that deeper life interactions with faculty and staff leads students to reflect on their classes even when they are not in class, apply coursework to other areas of life, and feel energized by their classes (Schreiner & Louis, 2006). Without sufficient academic progress, students do not persist to graduation. However,

Bronfenbrenner (1993) emphasized through an ecological perspective that “development is an evolving function of person-environment interaction” (p. 10). It is clear that while academic success is important, the experience students have in various environments discussing nonacademic matters is also critical to understand and address.

The model explained 51% of the variance in the academic determination construct. Academically determined students personify the attitudes and behaviors that allow them to persist through rigorous academic situations and endure the trials associated with achieving academic objectives (Schreiner, 2010b). Deeper life interactions with faculty or staff was the interaction variable with the strongest total effect ($\beta = .25$). Academic interactions with peers was the second strongest direct predictor and the third strongest total predictor ($\beta = .23$) of academic determination. Academic interactions with faculty followed as the third strongest direct predictor ($\beta = .19$). This indicates that when students know there are professors at their institution they can speak to when struggling academically or if they feel their faculty care about helping them to be academically successful, the students develop the psychological confidence needed for academic determination (Kuh & Hu, 2001). Students are fluidly moving between ecological subsystems (e.g., microsystem, mesosystem; Bronfenbrenner, 1977) as they interact with others and reap the benefits of such interactions.

The model explained 47% of the variance in social connectedness. The pathway from deeper life interactions with peers to social connectedness was the strongest single predictor ($\beta = .48$) for any of the thriving variables in the model. Counterintuitively, deeper life interactions had more influence on social connectedness than social interactions with peers. This finding shows that the power of social interactions with peers is in the safety and friendships that allow for more meaningful interactions with peers. Renn and Arnold (2003), using an ecological model for analysis, stated that “the interactions among immediate environments (mesosystems) create the forces of campus peer culture” (p. 261). Although conventional wisdom might postulate that social bonds drive peer culture, our results indicate that the forces Renn and Arnold discussed are built through various types of interactions, including those that explore meaning making.

Social interactions in the form of time spent with faculty and staff did not significantly predict social connectedness, but the greetings exchanged between students and faculty and staff did strongly contribute to social connectedness ($\beta = .23$). It appears that although time spent with faculty and staff helped students thrive in other domains, it is the casual greetings that help to promote social connectedness. The social interactions students had with peers also had a strong effect on thriving in regard to social connectedness ($\beta = .19$). This finding is reinforced by Chambliss and Takacs (2014), who noted the importance of finding friends in college and that “failing that, little else matters” (p. 3).

The model explained 54% of the variance in the diverse citizenship construct. The interactions students have across their ecological subsystems manifest in varying levels of success. This is especially pertinent to diverse citizenship, which is a combination of openness toward others, valuing the differences in others, and a desire to make a contribution to one’s community with the confidence to do so (Schreiner et al., 2020). Bronfenbrenner’s research on ecological models helps drive this connection by reinforcing that student development is affected by the relations between settings and by the larger contexts in which these settings are embedded (Renn & Arnold, 2003).

Deeper life interactions with faculty and staff had the strongest total effect on diverse citizenship ($\beta = .35$). This finding supports previous research from Astin (1993) on how students’ conversations with faculty in nonacademic settings help them develop agency thinking toward

civic mindedness and responsibility. Social interactions with peers had a moderate influence on diverse citizenship ($\beta = .16$), reinforcing previous research that validated how interacting with peers influences value development (Astin, 1984; Gurin et al., 2002).

The model explained 28% of the variance in positive perspective. Students who have positive perspective are confident in their ability to achieve goals and persevere in the face of challenges (Schreiner, 2010a). Although the overall variance explained by interactions for this variable was the lowest of all thriving factors, the direct contributions were sizable. Deeper life interactions with faculty and staff was a large contributor to positive perspective ($\beta = .31$). Deeper life interactions with peers moderately contributed ($\beta = .17$), as did academic interactions with staff ($\beta = .14$). Positive perspective is important for academic outcomes (Rice et al., 2006), and in this study's model positive perspective had a large influence on academic determination ($\beta = .38$).

Out of the 17 direct pathways from an interaction variable to a thriving variable in the final model, the interaction groups closely aligned with the thriving domains. In the academic thriving domain (engaged learning and academic determination), academic interactions represented the highest number of direct pathways. In the interpersonal thriving domain (social connectedness and diverse citizenship), social interactions represented the highest number of direct pathways. In the intrapersonal thriving domain (positive perspective), deeper life interactions represented the highest number of direct pathways. In terms of quantity of pathways, there was clear alignment. In terms of quality and strength of pathways, however, deeper life interactions represented the strongest contribution to overall thriving.

General Interactions and Student Success

Deeper life interactions strongly contributed ($\beta = .44$) to the variance in student thriving based on the general (MIMIC) model. This finding is evidence that interactions should not be limited in research to academic and social experiences. Social and academic interactions loom large in the literature because deeper life interactions are rarely measured. Cox (2011) highlighted the importance of quality of interaction over quantity, stressing that even a single positive encounter with a professor can greatly inform a student's perception of the entire faculty. When deeper life interactions are added to a model of social and academic interactions, it is clear that some of the greatest value from social and academic interactions is how they lead to deeper life interactions. The greatest contributors to holistic student success are the interactions with peers, faculty, and staff that occur around meaning, value, and purpose.

Implications for Theory and Practice

The findings from this study demonstrated that inclusion of staff as a key campus constituent for students and the addition of deeper life as a category of interactions fills an important void in comprehending the ways interactions influence college student success. As such, this study showed the theoretical importance of inclusivity from a measurement standpoint. Using Bronfenbrenner's (1993) ecological model has shown to be helpful in theorizing about how students succeed in various areas based on the various types of interactions they have. Research cannot unearth the complete effects of peer, faculty, and staff interactions unless all are measured and examined in the same model.

There are also implications for theory concerning the focus on causal pathways to success rather than correlated outcomes of success. Although it is helpful to show how students score on an instrument measuring an outcome, exploring the nuance of how and why that is the case allows for greater insight into such differences, rather than speculation. It is not so much whether

an institution has a program on campus with a particular label. What really matters is how campus programs, policies, and places help students interact with one another, with faculty, and with staff in academic, social, and deeper life ways.

Drawing from these theoretical inferences, the findings provide several practical implications. Renn and Arnold (2003) stated that “human ecology theory is more than a framework for explaining and studying the processes of student development; it is a useful guide for educational practice” (p. 286). In an age of accountability, student affairs professionals are continually in search of empirically proven practices for helping their institutions and their students succeed. The implications we discuss here stem from the central research questions, the model developed from this study, and the supporting literature.

When limiting the findings of this study’s model to only the largest effects, interactions with faculty or staff positively influenced all five factors of thriving. With these results in mind, administrators and faculty should diligently seek ways to foster various interactions with these constituents. This is particularly important for students’ deeper life interactions with peers, faculty, and staff, as the results of this study demonstrated how powerful their influence is on holistic student success. Although the value of peer interactions is established in the literature (Astin, 1993), using an ecological model for designing programs aimed at interactions holds promise for creating a strong peer culture and corresponding outcomes (Kuh et al., 2000). This study also showed specifically how different types of peer interactions influence different factors of student success. Such an approach is helpful for educational interventions designed to change campus peer culture on issues such as alcohol use, race relations, and academic dishonesty (Renn & Arnold, 2003).

Efforts to maximize peer interactions could take the form of teaching peer mentors the value of deeper life interactions and how conversation with fellow students about alcohol education or racism can change attitudes and behaviors. This type of structure would help students learn to make connections between their microsystem, mesosystem, and exosystem (Bronfenbrenner, 1993), embodying a truly holistic educational experience. Other practices might include examining whether typical structures for out-of-class interaction (e.g., office hours) are best suited for encouraging more meaningful interactions between faculty and staff and students. Where permitted, campus leaders could encourage faculty to take students to coffee, share a meal with students, or even go with students to various campus programs (e.g., weekly mid-day campus tradition events or guest lectures) and count that time as office hours. Campus housing departments could promote faculty-in-residence programs, wherein faculty and their families live in apartments located within student residential communities (Sriram, 2015).

Another possibility is to place faculty offices in places where students tend to gather, such as residential communities or student union buildings (Erck & Sriram, 2022). These are also areas where students interact across their ecological subsystems, encouraging development in a broad way. For student-staff deeper life interactions, colleges can be intentional about the mentoring role student affairs professionals can play (Martin & Seifert, 2011). Career services professionals, student activities staff, and academic and organization advisors should be encouraged to have conversations that allow students to verbally process their purpose for coming to college and how they hope to use this experience for the common good.

Student affairs leaders should relentlessly promote interactions between students and their faculty, staff, and peers (Sriram & Erck, 2022). One avenue for encouraging this is through a social-norming campaign on the power of interactions. College students are often told they should go meet with their professor in office hours or should learn to make new friends outside

of class, but are they ever given the reasons why? Are they presented strong evidence to advocate for such behavior? Social norms are the customs, traditions, and standards as a consequence of the contact of individuals (Asch, 1955; Sherif, 1936). Although social-norming campaigns often involve health behaviors, such as alcohol use (Baer & Carney, 1993; Borsari & Carey, 2003; Neighbors et al., 2006), student affairs leaders can present such evidence as offered in this study to change the culture around interactions by simply speaking directly about their benefits. As peer behaviors have a strong influence (one of the central ideas around social norms), having peers speak to students about the power of interactions would substantiate and undergird future interactions. If these efforts can spread to areas such as new-student experience initiatives, cohorts of students will be given more than the subjective encouragement to “go meet your professor.” They will be given clear proof on the value of different interactions, ensuring social norms are built around an accurate understanding of interactions and, therefore, will be more likely to be adopted. Proximity matters for interactions, but such proximity may not be enough of a catalyst without structured and intentional efforts.

Limitations of the Study

Although this study successfully achieved its intended purpose of creating a structural model explaining predictive pathways from interactions to thriving, limitations exist. The first limitation concerns the sample. The usable data set was large ($n = 903$) and included students from eight institutions across four states, allowing results to be generalizable. Enlarging the sample while including more private institutions, nonresearch universities, and community colleges would enhance the generalizability of the findings.

Second, this study is limited by omitting demographic characteristics in the analytic procedures. The conceptual framework and resulting hypothesized model did not examine conditional effects. It should be noted that men were underrepresented (29.7%) in the sample and White students comprised the majority of responses (64.4%). Although this study establishes a baseline model, future research that explores demographic variables should address this limitation.

A third limitation concerns the use of self-reported data and student self-selection to the established groups utilized. Some scholars question the reliability of self-reported data that is behavioral in nature (Porter, 2011). This study measured attitudes about interactions instead of attempting to measure the quantity of interactions. Quantity of interactions could be measured through additional data gathering methods (e.g., time diaries). There is also concern related to self-selection bias when observing students in living–learning communities (LLCs) without knowing if students who chose to participate in this study differ from students who did not.

Considerations for Future Research

The results of this study offer clarity to the strong connection between the interactions of students and their success in the academic, interpersonal, and intrapersonal domains of the college experience. Two specific recommendations might add to this clarity. First, the qualitative experiences of students in regard to their interactions were not explored in this study. This study captures the collective voice of students through a survey research design. Unearthing individual voices to gather a more complete picture of how interactions inform success would be valuable. Such research helps provide “greater power to explain the why of causal relationships” (Pascarella, 2006, p. 515). Qualitative studies of faculty and staff perceptions of interactions would offer insight to the power that interactions hold in relation to thriving. Additionally, most participants

in this study were first-year students. Longitudinal studies would help to capture additional nuance regarding how interactions might change over the course of time.

Second, conditional effects need to be explored. How do interactions influence thriving for different groups of students, such as first-generation students, transfer students, or students with minoritized identities? Do interactions influence thriving differently for first-year compared to upper-division students? Do international students experience peer interaction in unique ways that need to be better understood? An intentional delimitation of the current study was that all participants were residential undergraduate students. As such, this study did not consider online learners. With the effects of COVID-19 and the growth of online courses, interaction research around remote and virtual environments is particularly pertinent. Can deeper life interactions be fostered through video conferences? How do interactions differ in online versus face-to-face environments? Future studies should consider how online students interact and how such interactions promote success. Finally, it would also be worth considering additional outcomes. How does an increase in thriving influence other more traditional measures of success, such as grades and persistence?

Conclusion

The centerpiece of the college experience undoubtedly involves the interactions between students, faculty, and staff. These interactions manifest in unique ways when considering both their substance (i.e., academic, social, deeper life) and their connections to student thriving. In current literature, there is limited empirical research on how different interactions with diverse constituents influence success for students. By combining these research threads into one model informed by an ecological framework, this study filled a gap in the literature by explaining the relationship between interactions and college student success. Student interactions, in the aggregate, explained 66% of thriving in students. Academic, social, and deeper life interactions all made large contributions to the five thriving factors, but deeper life interactions—those that occur around meaning, value, and purpose—constituted the largest effects. As these factors of thriving are amenable to change through institutional intervention, this study provides strong evidence to support efforts that promote student interactions with peers, faculty, and staff. Student affairs professionals and administrators are in a unique position to lobby for increased interaction and, in turn, increased student flourishing.

Disclosure Statement

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