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From Expectations to Experiences: Using a Structural Typology to Understand First-Year Student Outcomes in Academically Based Living–Learning Communities

Matthew R. Wawrzynski Jody E. Jessup-Anger

This longitudinal study investigated to what extent noncognitive variables (e.g., expectations for college) and the college environment (i.e., academically based living–learning communities) influence students' college experience. This research goes beyond grouping all living–learning students into one category, which has dominated much of the literature, by using an empirically derived structural typology for living–learning communities (Inkelas, Longenecker, Leonard, & Soldner, 2005). Results suggest that being a student in a collaborative living–learning community is more likely to predict greater peer academic interactions and an enriching educational environment. Implications for practice and future research are discussed.

Living–learning communities are often touted as an innovative approach to reinvigorating undergraduate education (Gabelnick, MacGregor, Matthews, & Smith, 1990; Shapiro & Laufgraben, 2004). Existing research has illuminated the many academic (Inkelas & Weisman, 2003), involvement (Pike, 1999; Pike, Schroeder, & Berry, 1997), and environmental (Inkelas & Weisman) gains that exist for students in living–learning communities in comparison to their traditional residence hall peers. Living–learning communities provide more frequent informal interaction between faculty members and

students (Lenning & Ebberts, 1999; Pascarella & Terenzini, 1981, 2005; Pike et al.). Greater peer interaction and social integration are other benefits derived by students in living–learning communities.

Although existing studies shed light on the potential outcomes for students residing in living–learning communities, it remains difficult to determine if the outcomes are truly a value added by the environment or if they are a result of the characteristics that the students bring into these environments. Astin (2002) warned researchers about the danger of examining only the relationship between environments and student outcomes, “as it encourages causal interpretations of environmental effects when these may indeed be unwarranted” (p. 32). Much existing research on living–learning communities takes into account only cognitive input variables including students' past academic success measured by SAT/ACT scores, high school GPA, or high school class rank (e.g., Pasque & Murphy, 2005; Pike, 1999; Pike et al., 1997) or demographic characteristics such as race/ethnicity and sex (e.g., Stassen, 2003).

Because researchers (Sedlacek, 1996; Tracey & Sedlacek, 1985) have shown that cognitive variables are not the only variables to play a factor in student inputs and outcomes, it is important to go beyond the traditional verbal

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and quantitative areas, typically measured by standardized tests (Sedlacek, 2004), and explore the role that noncognitive input variables (e.g., adjustment, motivation, and student perceptions) have on student outcomes. Despite the substantial body of literature regarding the influence of noncognitive variables on student outcomes, none has intentionally explored the relationship between noncognitive variables such as student expectations and experiences in living–learning communities. Those studies that used noncognitive variables as expectation inputs (Inkelas & Weisman, 2003) included them on a survey asking students to reflect in retrospect, rather than asking students about their expectations upon entry to their environment.

Learning students' expectations for their residential environment is critical because their expectations often serve as predictors for behavior and satisfaction with an environment. These predictions are often accurate (Astin, 1993) and can assist in determining, and influencing, the likelihood of their success. Gonyea (2001) described an expectation as “something the student believes will happen, anticipates doing or experiencing, or perhaps even requires from the institution” (p. 2). When expectations are applied to one's self, they serve as goals, and when expectations are applied to a college or university, they serve as a requirement by which a student may measure contentment (Gonyea, 2001).

Helland, Stallings, and Braxton (2001/2002) examined fulfillment of expectations in relationship to the college student departure process. They noted that fulfillment of social expectations directly and positively impacted social integration and institutional commitment, suggesting that students whose expectations were fulfilled to a greater extent were integrated to a greater degree into the social community of the university. In addition, students' formulation of their expectations suggested that

they were developing long-term goals, a noncognitive variable found to be important to student success (Sedlacek, 2004). Tracey and Sedlacek (1985, 1989) found further evidence that having long-term goals predicted college grades, retention, and graduation for students. These studies illustrate the importance of understanding and acknowledging students' expectations for their college experience in determining student outcomes.

Another dilemma with interpreting existing living–learning community research is that researchers historically employed an atheoretical approach to analyzing data by grouping together students in different living–learning communities (Pasque & Murphy, 2005; Pike, 1999; Pike et al., 1997), negating differences among communities, or by combining students together by living–learning community theme (Inkelas & Weisman, 2003), without considering how the structure of the community (e.g., resources provided, number of faculty involved) might affect student outcomes. Lichtenstein (2005) discovered that even such influences as classroom dynamics within a learning community can influence student outcomes including retention and grades, illustrating the importance of such considerations as the extent to which resources are allocated to programs and the components affiliated with them when making comparisons.

In an attempt to rectify the difficulty comparing living–learning communities, Inkelas et al. (2005) developed a structural typology that classifies living–learning communities into one of three categories: (a) small, limited resourced, residence life emphasis programs; (b) medium, moderately resourced, student affairs/academic affairs combination programs; and (c) large, comprehensively resourced, student affairs/academic affairs collaboration programs. The categories are based upon various programmatic components, including faculty involvement, classes affiliated with the

programs, and collaboration between student and academic affairs. Although the Inkelas et al. typology enhances researchers' abilities to make informed comparison across communities, more testing of the typology is necessary to determine its usefulness in comparing across living-learning communities.

The purpose of the current study was to fill a gap in the research by examining students' expectations for their college experience as they entered their living environment and how their expectations, coupled with their living environment, influenced student outcomes. We used Astin's (2002) inputs–environment–outputs (I-E-O) model to frame the study and to assess the impacts that input characteristics (e.g., expectations for college) and environmental experiences (e.g., combined and collaborative type living-learning communities) have on student outcomes (e.g., student engagement and student learning). Although student involvement, or “the amount of physical and psychological time and energy the student invests in the education process” (Astin, 2002, p. 7), affects outcomes, the environment is a core element of his model. Because the combination of in-class and out-of-class have the largest spheres of environmental influence on student outcomes, it is appropriate to use the living-learning community typologies to better understand student learning outcomes.

Students' expectations for their college experience served as input characteristics. The different environments (i.e., collaborative or combined) were determined using the Inkelas et al. (2005) structural typology. In addition, we explored the variation in student outcomes among different living-learning environments. Specifically, we sought to answer the following:

1. Do students in academically-based collaborative or combined living-learning environ-

ments have different expectations for their college environment? (Because participation in the living-learning communities is voluntary, it is important to understand the input characteristics to understand the impact of these programs).

2. Do students report different outcomes in significant ways after their first year in the academically based collaborative or combined living environments?
3. What is the relationship between student expectations, academically based living-learning communities, and student outcomes?

METHOD

Participants

The data for the current study were obtained from first-year students residing in any of nine academically based living-learning communities at a Midwest public land-grant university. All first-year students are required to live on campus barring a few exceptions (e.g., live within 50 miles of campus, married, single parent). Students may self-select to live in the academically based living-learning communities (as long as space remains)—there is no separate application process. Of the approximately 750 first-year students who resided in the academically-based living-learning communities, 338 completed the First-Time Freshman Survey (FTF; 45% response rate) and 168 completed the Residence Hall Environment Survey (RHES; 22% response rate). When the participants from the two surveys were matched, only participants who answered all of the survey questions used in the current study were included, which resulted in a final sample of 95 students (about 13% response rate). Nineteen percent ($n = 18$) of the respondents were male; 81% ($n = 77$) were female. Ninety-two percent ($n = 87$) of the participants identified as White, 5.3% (n

= 5) as African American, and 3.2% ($n = 3$) as Asian American. University demographic statistics were consulted to determine if the sample was representative of first-year students in the living-learning communities at the university. Our chi-square test for goodness-of-fit revealed that, although the sample had a higher percentage of females, the percentage of White students and students of color was generally representative of first-year students in the academically based living-learning communities.

The low response rate is due in part to the choice we made to take a census approach to data collection (sending surveys to all first-year students in living-learning communities) as opposed to drawing a sample of students. Our rationale for choosing such an approach was that our population was identifiable and reachable via e-mail, and therefore we could reduce the likelihood of coverage error (i.e., when someone has a zero percent chance of being sampled) and sampling error (when only a subset of the population is sampled; de Leeuw, Hox, & Dillman, 2008). Another reason for our low response rate was our decision to employ listwise deletion of cases where data were missing. We chose this approach because it was the most conservative and we believed it introduced the least amount of bias into our inferences. The trade-off of these design choices is the reality that our data may suffer from nonresponse error, which occurs when those sampled do not respond and when those units differ from those who do in a way that is relevant to the study. However, because our population was narrowly defined (first-year students living in living-learning communities), our design was longitudinal, and our population was mostly representative of the larger population of first-year living-learning community students (confirmed by chi-square analysis), we believe our data to be adequate for an exploratory study.

Procedure

As a part of a much larger survey administration, all first-year students living in the residence halls were contacted via e-mail by a residence life staff member and asked to complete the FTE, a web-based survey administered during the Fall 2005 semester. Then, in spring 2006 all living-learning community students were contacted via e-mail by a faculty member and asked to complete the web-based RHES. The respondents were assured confidentiality for both surveys and asked to provide their student identification number so that their responses could be linked with other surveys. It is from these larger datasets that we extracted our data, focusing only on first-year students in the academically based living-learning communities.

Living-Learning Community Environments

The nine living-learning communities at the university where the study was conducted vary in the degree to which they were established and formalized; the first living-learning community was developed in 1962 and the most recent in 2007. The organizational structures of these environments are somewhat unique compared to other living-learning communities nationally in that, no matter the scale of the program, the communities are all administered through academic departments or colleges with various levels of support from student affairs. In order to compare students' expectations and experiences across the different types of communities, we used the structural typology empirically developed by Inkelas et al. (2005) to guide the classification of students from the living-learning communities into two groups, those from *collaborative* living-learning communities and those from *combined* living-learning communities. None of the living-learning

communities are residence-life based; therefore, the third typology developed by Inkelas et al., small residence life emphasis programs, was not used.

The collaborative living-learning communities are large and comprehensively resourced with a strong integration of responsibility between student affairs and academic affairs. All of the living-learning communities in the collaborative group have more than one faculty member affiliated directly with the program and faculty offices located within the community. In addition, there are classes or sections of classes specifically for the students involved in the collaborative living-learning community. Students in these living-learning communities are in the social sciences, natural sciences, or humanities. Reporting lines for these communities are also blended, with each living-learning program having staffing lines that report to both academic and student affairs, or having student affairs positions couched within the academic department or college. There were 60 respondents (63%) in the collaborative living-learning communities.

The combined living-learning communities are smaller than the collaborative communities and more moderately resourced. These communities offer activities, advising, and study groups within the environment and have an academic advisor or faculty member affiliated with the program. The integration between student affairs and academic affairs is not as closely linked in this cluster, as there are no shared staffing lines between the units like there are in the comprehensively resourced living-learning communities. Thirty-five respondents (37%) lived in these types of environments. Students in these communities are predominantly part of honors floors not affiliated with a collaborative living-learning community and students in living-learning programs focused on engineering and

environmental stewardship. The percentages of the respondents in the living-learning communities who comprised the final sample were representative of the students in the different residential environments (i.e., collaborative and combined).

Survey Instruments

First-Time Freshman Survey (FTF). The FTF is a 62-item questionnaire to assess items on expectations toward academic behaviors, attitudes and concerns about the university, goals and outcomes of college, institutional commitment, and support systems. The FTF was developed by a team of researchers who were interested in better understanding the first-year experience for students at the university. Each item (e.g., “I expect to keep up to date with class assignments”) is a statement that requires a response on a Likert-type scale (e.g., 1 = *not a chance*, 2 = *unlikely*, 3 = *neither likely nor unlikely*, 4 = *likely*, 5 = *a sure thing*).

Residence Hall Environment Survey (RHES). The RHES is a 76-item questionnaire to assess outcomes associated with the living-learning communities, residence hall environment, interpersonal interactions with peers and faculty, and the integration of academics with the living environment. The RHES also has Likert-type responses (e.g., “I worked on class assignments with classmates outside of class”). Unlike the FTF, which is only administered to first-year students in the residence halls, the RHES was administered to all living-learning community students.

Both the FTF and RHES surveys contain self-report data. A variety of means established the validity of the surveys. Content validity of the surveys was established by administrators, who were knowledgeable and well versed in the first-year student and living-learning literature, reviewing the survey items independently. Construct validity was tested through inter-correlations on the scores of the survey items.

TABLE 1.
Living–Learning Community (LLC) Student Expectation Factor Scales

Scale Items	Alpha Reliabilities	
	All FTF ^a LLC Students (<i>n</i> = 338)	LLC Students in Merged Samples (<i>n</i> = 95)
Campus Involvement	.69	.66
Take on a leadership position on or off-campus		
Join a campus, departmental, or hall organization		
Expect to be involved in establishing and maintaining floor-based community standards		
Get involved in volunteer work		
Attend regular community meetings on your floor		
Appreciating Difference	.61	.54
Broaden the diversity (race, religion, background, sexual orientation, culture) of your social group		
Seek out opportunities to learn about different cultures or lifestyles		
Become more aware of personal prejudices and stereotypes towards others		
Learn a great deal about who you are and what is important to you		
Value Clarification	.57	.58
Have experiences that challenge your beliefs		
Be caught between doing what you believe is “right” and “wrong”		
Have a conflict with someone that you believe is based on the difference in your ethnicity, background, or lifestyle		
Peer Interactions	.67	.73
Feel connected to a formal or informal group of other students		
Study with other students on the floor		
Feel that other members of the floor are serious about their academics		
Study with other students in some form of face-to-face study group		

Note. For Campus Involvement, Appreciating Difference, Value Clarification, and Peer Interactions, the survey question was, “How likely is it that you will do the following?” The response set for each item was not a chance, unlikely, neither likely nor unlikely, likely, and a sure thing.

^a First-time freshmen.

In an intercorrelation of all items, results were not unexpected. For example, “Have conversations with faculty members outside of the classroom,” moderately correlated (.62) with, “Have significant out-of-class conversations with faculty members.”

Controversy surrounds the validity of self-report data (Gonyea, 2005; Pace, 1985; Pike, 1995). However, self-report data are valid when five criteria are met: the requested information is known to the respondents, the questions are phrased clearly and unambiguously, the questions refer to recent activities, the questions merit a serious response by the respondents, and answering the questions do not embarrass or threaten the respondents (Bradburn & Sudman, 1988; Converse & Presser, 1989; Gonyea, 2005; Pace; Pike, 1995). Both the FTF and RHES surveys meet these criteria.

Independent Variables

Our independent variables comprised four expectation scales from the FTF survey, which included campus involvement, appreciating difference, values clarification, and peer interactions. The scales were created with the entire dataset of 1,342 students and have shown to be consistent since the survey was administered in 2000. The scales are summated rating scales. Scale reliabilities and survey items comprising each scale are included in Table 1. All of the Cronbach's alphas for the scales ranged from .54 to .73. Although some of the reliabilities were below .70, a modest reliability of .50 to .60 has been noted to be acceptable in the beginning stages of research (DeVellis, 2003; Nunnally & Bernstein, 1994). We also included a dummy coded variable indicating whether the student lived in a collaborative or combined living-learning community.

Dependent Variables

Our dependent variables were a series of five experience scales that measured student–

faculty interactions, sense of belonging, peer academic interactions, enriching educational environment, and peer intellectual connections. The scales are summated rating scales. Scale reliabilities and survey items comprising each scale are included in Table 2. All scales, but one, had a Cronbach's alpha above .70.

Analyses

The data analyses proceeded in several stages. First, we employed simple descriptive statistics, frequencies, and correlations on the variables to understand and explore the relationships of the variables and to assess if any assumptions would be violated during future analyses.

The second stage of our analyses included using multivariate analysis of variance (MANOVA) to examine our first research question, “Do students in academically based collaborative or combined living-learning environments have different expectations for their college environment”? We used Hotelling's T^2 ($p \leq .01$) because the independent variable had only two groups (students in the collaborative or combined residential learning environments) and there were multiple dependent variables that were correlated (Tabachnick & Fidell, 2007). The five dependent variables for the MANOVA in the second stage of our analysis included the four summated expectation scales from the FTF survey (i.e., Campus Involvement, Appreciating Difference, Value Clarification, Peer Interactions) and the faculty interaction variable “Expect to have significant out-of-class interactions with faculty members.” Although the faculty interaction variable from the FTF survey did not load on one of the four factors during the factor analysis, we were still interested in exploring criteria that distinguish the collaborative and combined living-learning communities (collaborative living-learning communities have faculty offices and academic classrooms in each of the living communities).

TABLE 2.
Living–Learning Community Student Experience Factor Scales

Scale Item	Alpha Reliabilities	
	All FTF ^a LLC Students (<i>n</i> = 186)	LLC Students in Merged Samples (<i>n</i> = 95)
Student–Faculty Interactions	.82	.81
Interact with a faculty member about a personal issue		
Talk with a faculty member about academic or intellectual matters not related to class		
Talk to a faculty member about my career direction or goals		
Talk with a faculty member about my academic performance on assignments, papers, or tests		
Talk to a faculty member about research opportunities		
Sense of Belonging	.90	.87
My residence hall environment has made the University seem smaller		
My residence hall environment has made college more manageable		
My residence hall environment provides me with a sense of belonging		
Peer Academic Interactions	.80	.85
Study with other students from my residence hall		
Work on class assignments with students in my residence hall		
Worked on class assignments with classmates outside of class		
I am intellectually challenged by peers in my classes		
Enriching Educational Environment	.84	.89
My residence hall environment has contributed to acquiring job or work–related knowledge and skills		
My residence hall environment has contributed to my ability to think analytically and critically		
My residence hall environment has contributed to helping me understand myself		
My residence hall environment has contributed to my broad general education		
Peer Intellectual Connections	.72	.64
Have conversations with peers about current local, national or world events		
Have conversations with peers about personal values		
Have intellectually stimulating conversations with other students		
Discussed ideas from classes with peers outside of class		

Note. For Student–Faculty Interactions, Peer Academic Interactions, and Peer Intellectual Connections, the question was, “In your experience, how often do you engage in the following while at the university?” The response set for each of these variables was on a continuum from *never* to *always*. For Sense of Belonging and Enriching Educational Environment, the question was, “How would you evaluate the following?” The response set for each of these variables was on a continuum from *disagree strongly* to *strongly agree*.

^a First-time freshmen.

In the third stage of our analyses, we also used MANOVA to examine our second research question, “Do students report different outcomes in significant ways after their first year in the academically-based collaborative or combined living environments?” and to determine whether students’ experiences in the two types of living–learning communities differed. We also used Hotelling’s T^2 ($p \leq .01$) for this analysis. The five summated experience scales derived from the environment survey served as our dependent variables, and the collaborative and combined living–learning community variable was the independent variable.

Finally, we used hierarchical multiple regression to explore the influence that the students’ expectations for college and their living–learning community type had on each of the five outcomes (i.e., dependent variables) of the students in the living–learning communities. Students’ expectations were entered on step 1 and living–learning community type was entered on step 2 as a dummy-coded variable (combined = 0, collaborative = 1).

Limitations

As with all studies there are limitations that must be noted; we note four here. Although the institution in the current study has one of the largest residential populations in the country, it still represents the experiences and expectations of students at one institution. Second, the living–learning communities at this institution are academically initiated and do not incorporate thematic or interest-based living–learning communities (e.g., wellness, substance free, etc.). Third, there was a greater proportion of women respondents in our sample. Finally, much like other studies (Inkelas, 1999) we were unable to explore the impact that race has in the living–learning communities because of the small number of

students of color who were in living–learning communities. Despite these limitations, the results are still noteworthy.

RESULTS

The MANOVA in our analyses revealed that students in the collaborative and combined living–learning communities did not demonstrate statistically significant differences in their expectations for college. This finding suggests that students in the collaborative and combined living–learning communities entered college with similar expectations for their college experience.

In the second stage of our analyses, we examined whether students’ experiences in the two types of living–learning communities differed. The data in Table 3 represent the statistically significant mean differences and the effect sizes (i.e., partial eta squared) for the impact of type of living–learning environment on students’ peer academic interactions and views that their living environment is an enriching educational environment. As Table 3 illustrates, students in the collaborative living–learning communities perceived their environments as more enriching and educational and had greater academic interactions with their peers than did students in the combined living–learning communities. The partial etas squared indicate that the living–learning environments have a large effect (Cohen, 1988) on students’ peer academic interactions ($\eta^2 = .19$) and a moderate to large effect on students’ enriching educational environment ($\eta^2 = .08$). These findings are particularly interesting given that students in the collaborative and combined living–learning communities entered college with similar expectations for college, as indicated in our first analysis.

Despite the differences in students’ peer academic interactions and perceptions of an

TABLE 3.
Differences in Peer Academic Interactions and Enriching Educational Environment
Among Collaborative and Combined Living–Learning Students

	Collaborative (<i>n</i> = 60)	Combined (<i>n</i> = 35)	Significance	Partial η^2
Peer Academic Interactions	13.05	8.51	$F(5, 85) = 20.60, p < .001$	.19
Enriching Educational Environment	10.14	7.00	$F(5, 85) = 7.745, p < .01$	.08

Note. Only those scales that were statistically significant are included. Hotelling's Trace = 5.58.

enriching educational environment across the two types of communities, we did not find that students in the collaborative living–learning communities were more likely than those in the combined living–learning communities to interact with faculty. This is surprising, given that in addition to the considerable amount of space allocated for faculty offices, classrooms, and laboratories in the collaborative living–learning communities, there is also a strong emphasis on student–faculty interactions. In view of the fact that the sample comprised only first-year students, the lack of student–faculty interactions may be attributable to first-year students' intellectual and cognitive development, as they may view faculty as unapproachable authority figures (Baxter Magolda, 1992; Belenky, Clinchy, Goldberger, & Tarule, 1986; Inkelas et al., 2005; King & Kitchner, 1994; Perry, 1970). We were also surprised that although the students in collaborative living–learning communities were engaged with their peers around academic issues, intellectual interactions between the students did not carry over and continue in their day-to-day lives.

In our final analysis, we examined the relationship between student expectations for college, the two living–learning environments, and five student outcomes. The data in Table 4 depict both the total variance explained

(adjusted R^2) and the partial standardized regression coefficients attributable to the expectation variables and the living–learning environment variable to predict student–faculty interactions, sense of belonging, peer academic interactions, enriching educational environment, and peer intellectual connections.

There were several student expectation variables that predicted various student outcomes, yet no single expectation variable was a statistically significant predictor for all of the student outcomes in the respective models. The strong negative relationship between the appreciating difference variable and the two outcome variables (student–faculty interactions and sense of belonging) was curious. Perhaps the students who expect to broaden the diversity of their social group or to seek out opportunities to learn about other cultures or lifestyles find their experiences in these living–learning communities alienating because they perceive them as homogeneous and unsupportive of exploring differences (after all, 93% of the students in the sample identified as White). Furthermore, if these students associate faculty within the living–learning communities as aligned with the values they perceive as unsupportive, they may be less inclined to approach the faculty for academic and non-academic matters.

TABLE 4.
Summary of Models Predicting Student–Faculty Interaction, Sense of Belonging, Peer Academic Interactions, Enriching Educational Environment, and Peer Intellectual Connections at Step 1 and Step 2

Expectations	Experiences									
	Student–Faculty Interaction		Sense of Belonging		Peer Academic Interactions		Enriching Educational Environment		Peer Intellectual Connections	
	Step 1 β	Step 2 β	Step 1 β	Step 2 β	Step 1 β	Step 2 β	Step 1 β	Step 2 β	Step 1 β	Step 2 β
Campus Involvement	.17*	.17	-.01	.01	.00	.04	-.03	-.01	.31**	.32**
Appreciating Difference	-.31**	-.31**	-.27*	-.27*	-.09	-.10	-.15	-.15	-.03	-.03
Value Clarification	.01	.01	-.04	-.04	.10	.09	-.03	-.03	.15	.15
Peer Interactions	.09	.08	.24*	.21	.42***	.34**	.28*	.32	.32**	.31**
Have Significant Out-of-Class Conversations With Faculty Members	.35**	.36**	.10	.10	.02	.05	.10	.12	.00	.01
Living–Learning Environment Variable ^a		.04		.16		.40***		.27**		.09
R ²	.21	.22	.11	.14	.16	.32	.09	.16	.29	.30
Adjusted R ²	.17	.16	.06	.08	.11	.27	.04	.10	.25	.24
F	4.50***	3.74**	2.10	2.20*	3.28**	6.36***	1.73	2.67**	6.81***	5.80***

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

^a Collaborative = 1, combined = 0.

Other results from Table 4 show that, in addition to appreciating difference, two other expectation variables, campus involvement and expect to have significant out-of-class conversations with faculty members, were significant predictors for the student–faculty interaction outcome. Campus involvement remained a significant predictor only until the living–learning environment variable was entered. We were not surprised that the expectation of having significant out-of-class conversations with faculty members was a strong predictor of student–faculty interactions within the living–learning communities generally and also when we entered the living–learning community environment variable (regression coefficients of .35 and .36, respectively). One of the many messages students often hear about the benefit of living–learning communities is that they afford the opportunity for closer connections and interactions with faculty. Given this message, we were surprised that the living–learning environment variable was not a predictor for student–faculty interactions, suggesting that the students in both the collaborative and combined living–learning communities share similar experiences of interacting with faculty. This finding is particularly interesting as the collaborative living–learning communities have academic classrooms and faculty offices within the collaborative living–learning communities.

Table 4 also illustrates the relationships between the outcome variable sense of belonging and two significant expectation variables (appreciating difference and peer interactions). As discussed earlier, appreciating difference was less likely to predict sense of belonging. In addition, peer interactions predicted sense of belonging, but only before the living–learning environment variable was entered. The combined variables predicting sense of belonging did however explain 8%

of the variance (adjusted $R^2 = .08$), which indicates that the expectation variables and the living–learning environment variable offer modest explanations of patterns of variation in sense of belonging.

Some of the strongest positive relationships existed between the expectation of peer interactions and each of the three student outcomes: peer academic interactions, enriching educational environment, and peer intellectual connections. In fact, the peer interactions expectations variable explained one third or more of the total variance for each of these three outcomes. It is interesting to note that, although peer interactions had a large effect on predicting enriching educational environment, when the living–learning variable was entered, peer interactions was no longer a significant predictor. Although we were able to control for expectation variables, our findings again suggest that the students in the two living–learning community types did not differ on their expectations for peer interactions. And although the living–learning environment variable was not a significant predictor for peer intellectual connections, peer interactions remained a strong predictor. Campus involvement was equally important to peer interactions in predicting peer intellectual connections, with both combined predictors explaining over 60% of the total variance for peer intellectual connections (.31 and .32, respectively).

Of particular interest to the current study is the strong influence of the living–learning environment variable on peer academic interactions and enriching educational environment (as indicated by the R^2 change = .16 and .06, respectively). Also noteworthy in Table 4 is that the predicted model for enriching educational environment was not significant until after the living–learning environment was entered.

Our findings highlight the importance of

considering the influence of the living–learning resources and structure when examining living–learning community outcomes such as the academic interactions of peers or the contribution of their residence hall environment to enriching educational experiences.

DISCUSSION

The current study investigated three research questions associated with expectations and experiences of students using an empirically derived typology of living–learning communities. We were able to confirm the importance of noncognitive variables, such as students' expectations, as input measures by examining the influence of student perceptions and expectations on student outcomes (Sedlacek, 2004). Using student expectations as input measures, we found that students in the collaborative and combined living–learning environments did not have different expectations for their college involvement, appreciation of differences, clarification of values, or interactions with faculty members.

Despite the similarities in students' expectations for college, we found that students in the living–learning environments do experience college differently. More specifically, when we held the noncognitive expectations constant, the regression analyses revealed that students in collaborative living–learning communities were more likely to interact with their peers around academics and had more positive perceptions about the benefits of their residence hall environment contributing to enriching educational experiences.

Because we used the structural typology of living–learning communities (Inkelas et al., 2005), differences we found between the collaborative and combined living–learning community students are difficult to contrast directly with other studies, which often focused on comparing all living–learning

community students to their non living–learning community peers (Pike, 1999; Pike et al., 1997) or grouped students by learning community theme, without accounting for varying structures or resources allocated to the communities (Inkelas & Weisman, 2003). Our findings do confirm some of those found in other studies, but they also raise issue with grouping communities by theme without accounting for resources.

The collaborative and combined living–learning community students in our study were in communities with a strong curricular or honors focus, respectively, and therefore may be most comparable to a study that included students in curriculum-based or honors living–learning communities conducted by Inkelas and Weisman (2003). Similar to the curriculum-based living–learning communities in Inkelas and Weisman's findings, the students in the collaborative living–learning communities in our study reported their residence hall to be academically and socially supportive. Yet, the combined living–learning community students (comprising primarily honors students) in our study were less likely to report greater academic interactions with their peers than were the students in collaborative living–learning communities; whereas Inkelas and Weisman found that students in honors living–learning communities, and not curriculum living–learning community students, were more likely to report greater academic interactions with their peers. Perhaps the collaborative living–learning communities in our sample are resourced sufficiently and more appropriately to encourage peer academic interactions because of the common coursework, availability of study spaces in the hall, and accessibility of faculty offices.

Finally, if we compare our results to those of researchers studying honors students, keeping in mind that the combined living–learning community students in our study were

largely honors students, we did not find many of the benefits reported for being in honors living-learning communities (Inkelas & Weisman, 2003; Seifert, Pascarella, Colangelo, & Assouline, 2007; Soldner, McCarron, & Inkelas, 2007). In fact, many of the benefits attributable to honors students in other studies were found to be benefits shared by the collaborative living-learning community students in our study. The collaborative living-learning community students in our study indicated that they were more likely to discuss academic issues and study with their peers than were students in the combined living-learning communities. The academic influence of the faculty and peers of the collaborative living-learning communities may also explain why students in the collaborative living-learning communities had greater perceptions of their environment contributing to greater educational gains such as critical thinking and analytical skills.

IMPLICATIONS

The findings from the current study make important contributions to the higher education literature by highlighting the structural and resource differences of living-learning communities that may influence student outcomes. Furthermore, the findings advance the conversation about living-learning communities beyond the living-learning to nonliving paradigm that has dominated much of the research on living-learning communities. The findings also suggest several considerations for student affairs professionals, researchers, faculty, and anyone with responsibilities in living-learning communities.

Implications for Practice

First, the strong negative relationships between the expectation variables appreciating difference and student-faculty interactions and the

experience variable sense of belonging illustrates that faculty and student affairs educators responsible for implementing living-learning communities must foster an environment where students have the opportunity to explore and appreciate difference. In order for such an environment to exist, faculty and administrators should take a multifaceted approach, which may include recruiting and retaining diverse students, faculty, and staff; ensuring that the curricular and co-curricular elements of the community are infused with diverse perspectives and voices; and creating opportunities for conversation about difference in and outside of the classroom. The positive impact that these dialogues may have on a student's perception of the learning environment has the potential to greatly influence a student's sense of belonging (Hurtado, Milem, Clayton-Pedersen, & Allen, 1999).

A collaborative living-learning community is particularly conducive to implementing a multifaceted approach because the blurred staffing lines and faculty presence within students' living space encourage consistent communication between faculty and staff. It is vital that faculty and practitioners hold shared goals for student learning so that their efforts are complementary to one another.

Second, the findings illustrate that the physical and resource structure of living-learning communities matter, as those students in the collaborative communities reported experiencing greater academic interactions with peers and an enriching educational environment. We realize that not all institutions have the fiscal resources to renovate and reconfigure their residence halls to include academic offices and classroom space. Absent changes in the physical structure, other actions can be taken to foster academic peer interactions and an enriching educational environment; including clustering courses

and living spaces so that first-year students in the same residence hall floor share the same classes. Many universities have created clustered courses for first-year students, yet have stopped short of integrating them in the residence halls. The combination of students in clustered courses living on the same floor in designated residence halls may increase the likelihood that students will continue their class discussions beyond the classroom setting. Although combining clustered courses and residence hall living may result in the development of academic peer interactions and an educational environment in the residence halls, the faculty who teach in these clusters and student affairs educators responsible for shaping residence hall communities can mutually reinforce the possibility by conveying to students the importance of integrating academics into their day-to-day lives. If everyone is responsible for creating learning experiences (National Association for Student Personnel Administrators & American College Personnel Association, 2004), then all are responsible for creating and encouraging opportunities for learning.

Finally, the results from the current study indicate that college and university administrators must go beyond simply placing faculty offices and academic classrooms in residence halls. The allocation of space for academic pursuits in the residence halls does increase the chances that student–faculty interactions will occur, but this does not mean that students, particularly first-year students, are comfortable interacting with faculty in students' early college careers. Living–learning community staff need to be more intentional in creating formal and informal opportunities for students and faculty to interact. It is important to encourage and provide faculty with opportunities to interact with students beyond the classroom or academic context as soon as students arrive on campus.

Implications for Future Research

The current study was a first attempt to employ an empirically derived typology of living–learning communities (Inkelas et al., 2005). Our results suggest the need for additional research on living–learning communities in at least three areas. First, the institution where our study was conducted did not have living–learning communities in the third classification of the living–learning community typology, residential life emphasis programs, so we were able to include students from only two (e.g., collaborative and combined types of living–learning communities) of the three living–learning classifications. It is important to investigate this third structural classification at other institutions that may have living–learning communities with a residential life emphasis in addition to the collaborative and combined types to see if differences exist. Doing so will make full use of the typology advanced by Inkelas et al. and will assist in the understanding of how structural differences affect student outcomes and how limited resources can be used to foster the growth and development in students.

Second, although the structural typology helped us better understand the experiences of first-year students, additional research needs to further explore the experiences of the structural typology on students who are sophomores, juniors, and seniors. Despite the finding that collaborative living–learning community students found their living–learning environments made college more manageable, we were left wondering if this is an artifact of students' transition during the first-year or if there will be longitudinal benefits due to participation.

Finally, like other studies (Inkelas, 1999) the living–learning communities in our study had a larger proportion of White students, which prevented us from surveying

a critical mass of students of color. We could have collapsed all students of color into one category and compared them to White students; however, we resisted this often-used strategy because this suggests that all students of color have the same expectations and experiences, when we know that this is not the case. Further research should explore the impact that living-learning communities have on students of color.

Conclusion

Existing research on living-learning communities underscores the potential of these communities in promoting academic and social integration for undergraduate students. However, as the results of the current study illustrate, even when students enter their living-learning communities with similar expectations for college, structural differences in their living-learning community environment result in different outcomes of their experience. These findings illustrate the

importance of taking structural differences into consideration when conducting living-learning community research, resisting the urge to collapse all students in different communities together to increase sample size, or dividing them atheoretically based on living-learning community theme and making comparisons across communities. The findings also suggest that living-learning community leaders be mindful of resources and curricular/co-curricular integration when developing and administering living-learning communities, investing in creating connections between faculty and staff across the curricular and co-curricular divide, promoting an environment conducive to exploring diversity, and creating shared goals for student learning.

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