

ABSTRACT

BUCK, ALISON ROSE. Learning Community Participation and Sense of Community.

(Under the direction of Maxine Atkinson.)

To perform well and persist at universities, students need to feel socially and academically integrated. Many universities have instituted learning communities to promote both types of involvement. I explore whether participants in learning communities develop a greater sense of community in the classroom and the university than non-participants. My sample consists of 273 first year students in 31 small seminar classes in a variety of disciplines. My comparison group is 73 first-year students taking introductory sociology courses. I also control for the effects of race, gender, family income, residence type and course subject. This study represents one of the many ways that sociology can contribute to the understanding of college student behavior

LEARNING COMMUNITY PARTICIPATION AND SENSE OF COMMUNITY

By

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BIOGRAPHY

Alison Buck was born May 8th, 1980 in Dayton, Ohio. Ten days later, Mount St. Helens erupted on the other side of the country. The events are probably unrelated.

Having narrowly escaped the name Braunwyn, Alison led a carefree childhood in Dayton until the age of 5. At that point her parents, being caring individuals, decided that the excellent school systems and friendly, small-town environment of nearby Yellow Springs made it a better place for her and her younger brother, Richard, to grow up. Alison attended Mills Lawn Elementary from kindergarten through sixth grade.

From there, she did a six-year stint in Catholic school at St. Brigid's and Carroll High School, during which she honed her critical thinking and arguing skills. Alison's college years took her to Guilford College in Greensboro, North Carolina. At college, she fell in love with Sociology, the Southern climate, and a man named Nick. She was pleased with her acceptance into the NC State Sociology Graduate Program because she didn't have to move very far, but has since come to appreciate other aspects of the program. Alison lives in Cary with Nick and plans to stay there at least until she completes her doctoral degree.

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INTRODUCTION

Just as for members of society at large, feelings of solidarity are important for students in institutions of higher education. To perform well and persist at universities, students need to become integrated into social and academic communities (Astin 1984; Tinto 1993). Many schools have instituted learning communities to promote both types of integration (Gabelnick, MacGregor, Matthews and Smith 1990). Studies that attempt to assess the impact of learning communities on student attachment to the university often use measures of Tinto's (1993) concepts of social and academic integration. Social and academic integration, as well as other commonly used concepts like involvement or quality of effort, reflect an orientation towards positive impacts on student outcomes rather than on student experiences. In addition, these measures portray only certain aspects of students' membership in social and academic communities. Sense of community, a construct developed in community psychology, more fully captures various dimensions of belonging and membership in small groups or interpersonal communities. This research focuses on the impacts of learning community participation on students' sense of community within the classroom and university.

LITERATURE REVIEW

Theories of Student Involvement

The popularity of learning communities and other student-involvement programs reflects a relatively recent concern in higher education with academic and social involvement as a means to retain students. Astin (1984) and Tinto's (1993) theories of student retention facilitated the emergence of this concern. Based on student persistence

research, both scholars formulate theoretical approaches to involving and retaining students. Astin (1984) criticizes past approaches for treating students as passive “black boxes” on whom faculty and administrators enacted various strategies (519). He advocates a pedagogical approach focused on mobilizing time, money, subject matter, and individualized attention towards engaging students so they will spend more time on academic and extracurricular school activities.

Tinto (1993) takes a more sociological approach, incorporating Durkheimian notions of social integration and egoistic suicide to explain why students persist at or depart from a university. He suggests that as students enter a college or university they gradually develop connections within academic and social communities on campus. Just as members of society with few social connections may choose to exit society by committing egoistic suicide, students with too few social connections or too little academic involvement at a college may choose to exit the institution through transferring or dropping out.

Tinto conceptualizes the sense of connection which keeps students at colleges and universities as academic and social integration. These concepts arise largely from Durkheim’s concept of social integration. Durkheim (1951 [1915]) labels a group or community as more integrated as the number (202) and strength (170) of social bonds or commonalities among its members increase. As students become more integrated into the academic or social systems of the college, they establish membership in that particular community (Tinto 1993). While notions of social and academic integration have helped underline the importance of involvement to student experiences in college, I argue that

they provide a superficial picture of student membership in social and academic communities.

Measures of social and academic integration focus primarily on student involvement in academic and other activities and perceptions of the campus, faculty, self, and other students (e.g. Tinto 1997). While the degree of involvement students have in academic and extracurricular activities and their perceptions of other students and faculty may represent some dimensions of membership in social and academic communities, they do not capture the whole picture. These behavioral measures fail to encapsulate other important aspects of community membership, such as the sense of belonging students may feel within a community or the intensity of their evaluations of classmates or instructors. In fact, Tinto (1993) explicitly acknowledges the inadequacy of his notions of integration to capture student's belonging within social and academic communities. Though he uses concepts of social and academic integration, Tinto argues that community membership may be a more useful way to conceive of students' relationship to colleges and universities (106).

Since theories of student involvement arose primarily in response to concerns about retaining students, the focus on behavioral measures of community membership is not surprising. In Astin and Tinto's conceptions, involvement and integration are seen as desirable phenomena, but ultimately as phenomena that are means to the greater end of student persistence. For example, Tinto's (1993) introduction to his foundational book suggests that schools must retain students as "the only reasonable course of action left to insure their survival" (2). Given the incompleteness of social and academic integration measures and Tinto's own contention that both integration and membership are important

and that community membership may be more important, I believe researchers measuring students' connection to colleges and universities may need to go beyond behavioral concepts of social and academic integration. One possibility is social psychological sense of community.

Since classical social theorists like Tonnies (1957) and Durkheim (1889 [1964]) hypothesized a change in the way people interacted within communities, social sciences have had a concern with measuring sense of community. The idea that individuals are experiencing a loss of community or a change at the level at which they experience community has generated a great deal of research in fields like urban sociology (for example Foley 1952, Hunter 1975) community psychology (for example Sarason 1974) with on measuring sense of community. Psychological sense of community emerged as a central concept in the field of community psychology with Sarason's (1974) foundational work. McMillan and Chavis (1986) later built on Sarason's concept, theorizing a four dimensional construct. Their four dimensions subsume Tinto's (1993) proposed concepts, as well as elaborating the process through which individuals develop and maintain attachments to their communities. The four dimensions of sense of community are membership, influence, integration and fulfillment of needs, and shared emotional connection between members. Learning communities explicitly seek to include students as members of an on-campus community in ways that both involvement theories and sense of community theory would see as consistent with a heightened feeling of belonging.

Learning Communities

Alexander Meikeljohn implemented the first learning community in 1927 at the University of Wisconsin (Gabelnick et al. 1990), but learning communities have only emerged as a popular and prominent form since the 1980's (Lenning and Ebbers 1999). A major reason for the rise of learning communities has been a growing emphasis on student involvement in academic and social life in the university. Gabelnick et al. (1990) define a learning community as:

any one of a variety of curricular structures that link together several existing courses – or actually restructure curricular material entirely – so that students have opportunities for deeper understanding and integration of the material they are learning and more interaction with one another and their teachers as fellow participants in the learning enterprise. (P. 19)

Learning communities are one of a variety of programs that promote active learning of academic material and promote student-student and student-teacher interaction (Gabelnick et al. 1990). Different institutions have implemented a variety of different types of learning communities. One major form enrolls the same group of students across two or more linked courses, often centering on a particular cohort (usually first year students) or academic area. A second major form, residential learning communities or living learning communities, allow students (often first years) to select into specially designated dormitories. Another type of learning community is the Freshman Interest Group (FIG), in which students taking the same classes meet outside of class to discuss course material (Tinto 1998). Institutions often combine or modify different forms in practice. For example, residential learning communities are sometimes connected to linked co-curricular activities (Inkelas and Weisman 2003).

Learning communities may be unique among programs designed to promote retention in that they directly confront problems of student social isolation and afford a community environment (Johnson 2000). Students who participate in learning communities spend more time around each other and have more opportunities for contact with faculty, which should lead them to develop better support networks beyond the classroom (Tinto 1998). As well as these theoretical connections between participation in learning communities and sense of community, a number of empirical findings suggest such a connection should exist.

Researchers have linked learning communities to sense of community within the university and classroom. Royal and Rossi (1996) studied sense of community in elementary students and found that participants in a learning community had stronger sense of community both within the learning community and the school as a whole. Other studies support the idea that participation in a subgroup will affect participant's sense of community both within that subgroup and the larger group (Brodsky and Marx 2001). Besides these studies that suggest direct connections between sense of community and learning communities, a number of studies relate learning community participation to higher academic and social integration.

First, several findings indicate a relationship between participation in FIG's and engagement in academic and social communities at two-year institutions (Tinto and Goodsell 1993, Maxwell 1998). Qualitative evidence suggests this occurs through social connections that participants make with others in the learning community group (Tinto and Goodsell 1993). FIG's and other learning communities that hinge on out-of-class meetings may be less significant for students at traditional institutions who have more

opportunities for interaction than their peers at community colleges. Unfortunately, no studies have specifically examined the effects of this type of learning community at a four-year institution.

A number of studies have examined the effects of residential learning communities at four-year institutions. These studies have produced somewhat contradictory results. Stassen (2003) found that students in residential learning communities were more integrated into academic campus communities than non-participants, but only scored higher on some measures of social integration. In contrast, another study found that learning community participants were more socially integrated, but did not have significantly higher academic integration than their peers (Pike, Schroeder, & Berry 1997). Finally, Pike (1999) found residential learning community participants more involved and integrated into both social and academic communities. While the precise benefits of participation in residential learning communities is not clear, they do seem to aid students in participating in social and academic communities.

Several studies linked participation and integration in social and academic communities to participation in learning communities that consist of courses linked together. Studies of students at technical and community colleges who participate in linked courses have found they are more academically and socially integrated than those who do not (Tinto 1997; Goldberg and Finklestein 2002). At large four-year institutions the results may be slightly different. Lichtenstein (2005) found that participants in linked courses were more likely to report a sense of community in the classroom, but this feeling did not translate to the university as a whole. The effect of linked course learning community participation may differ slightly depending on the type of institution, but

participants generally report greater belonging in social and/or academic communities than non-participants.

Finally, Zhao and Kuh (2004) studied a large, national sample of college students and found that students who participated in various types of learning communities were more engaged in both social and academic communities on campus. Overall, the research suggests that various types of learning communities enhance students' experience of community in a variety of institutional settings.

While few studies have explicitly measured the impact of learning community membership using sense of community, those that have find learning community participation linked to greater sense of community. In addition, existing research suggests that participation facilitates students' belonging in academic and social communities. This leads me to several hypotheses that I will test in this research.

HYPOTHESES

Students in classes that use techniques aimed at involvement tend to have a higher sense of community (Spann 2000). Learning communities often incorporate small linked courses that focus on student involvement (Gabelnick et al. 1990), and participation in learning communities is linked to greater engagement with academic material (Tinto 1997; Pike 1999; Zhao and Kuh 2004). Consequently, students who participate in learning community courses should have a stronger sense of community at the classroom level than non-participants.

Also, since involvement in activities leads to stronger sense of community (Pretty 1990; Lounsbury and DeNeui 1996; Spann 2000) and participation in learning communities is associated with greater involvement in school activities (Pike 1999),

participants in learning communities should have a stronger overall sense of community than non-participants. Additionally, since Spann (2000) found Classroom Level Sense of Community (CSOC) positively related to University Level Sense of Community (USOC), if learning communities heighten Sense of Community in the classroom, it should be higher at an institutional level as well. Finally, since participation in learning communities leads to an overall more positive perception of the campus environment (Zhao and Kuh 2004), participants in learning communities should have heightened sense of community at the university level as compared to non-participants. Consequently, students who participate in learning communities should be expected to have a stronger sense of community within the university than non-participants.

H_{1a}: Students who participate in learning community courses will have a stronger USOC than non-participants.

H_{1b}: Students who participate in learning community courses will have a stronger CSOC than non-participants

Spann (2000) found that higher CSOC led to stronger USOC. Royal and Rossi (1996) found that participation in an elementary school learning community led to stronger sense of community within both the learning community and the school as a whole. Other studies support the idea that the degree to which members experience community at the subgroup level sense of community may affect the strength of aggregate level sense of community and the commitment members have to the aggregate community (Brodsky and Marx 2001).

H₂: Students with stronger CSOC will have stronger USOC.

We also control for a number of relevant variables. Some students answered the questionnaire in more than one class. We control for this factor, since multiple exposures to the survey instrument could potentially produce different answers than a single exposure.

Course subject may also affect sense of community. Spann (2000) found that students in social science and humanities courses had stronger sense of community than students in math and science courses. A students' course subject may affect his or her sense of community prior to or beyond participation in a learning community.

Residence may also play a part in sense of community. Student dorms may be a site around which students build a sense of community (Berger 1997). Consequently, students who live on campus may have stronger sense of community than those who live off campus (Lounsbury and DeNeui 1995). Further, students who live in learning community dorms may be more socially integrated than those living in conventional residence halls (Pike et al. 1997, Pike 1999).

While Tinto (1993) suggests background characteristics only indirectly affect the degree to which students belong to social and academic communities, other studies suggest demographic characteristics may have direct effects on sense of community. Participation in learning communities might have different effects for men and women. Pike (1999) found that female students are more likely to be involved on campus than male students. Lounsbury and DeNeui (1995) found that female students had a stronger sense of community than men. Consequently, women and men may have different base levels of sense of community and participation in learning community courses may have different effects for them.

Research on the effect of race/ethnicity on participation in learning communities has been inconsistent (Stassen 2003; Zhao and Kuh 2004). Since the racial or ethnic fit between students and colleges may affect involvement and integration (Astin 1984; Littleton 2002; Hernandez and Lopez 2004), this inconsistency may arise from differences in schools' racial and ethnic composition. Berger's (1997) finding that students of color at a predominantly white institution were less likely to identify with their dormitories as communities and Astin's (1975) finding that African American student involvement tends to be higher at historically-black institutions than predominantly white ones support this conclusion.

Students' socio-economic background may influence their relative sense of community at an institution. One study found students' with lower socio-economic than average backgrounds had significantly lower sense of community than their peers (Berger 1997). Again, this may arise from a "student fit" discrepancy and might be different for institutions where student income is lower on average. In this research, I will control for course subject, residence type, gender, race, and socio-economic status.

METHOD

Data

The data were compiled from two main sources by the office of Undergraduate Program Assessment at a large (30,000 students) southeastern land grant university. First, data came from an end of semester questionnaire given through the First-Year Inquiry (FYI) Program to a population of students in 31 FYI classes and a control group of 10 introductory-level sociology classes that included first-year students during the Fall 2005 semester. The FYI program administers general education courses limited to first-year

students that emphasize the development of critical thinking skills through active teaching and learning and smaller class sizes. The FYI courses typically cap enrollment at twenty-two students, though one course had a much larger enrollment of 130 students. The program designated 38 in this class who were not first-year students as peer mentors. Introductory sociology courses typically cap enrollment at 50 students, though instructors may override this limit resulting in several classes in the control group having enrollment over 50.

Five-hundred and forty-three first-year students in FYI courses completed surveys and 135 first-year students in the control group did so. Using respondent's student ID numbers, these data were matched with demographic data and data from the First-Year Student Survey collected by the Office of University Planning and Analysis. The First-Year Student Survey is administered to all first-year students who attend orientation at the beginning of the semester.

Of the 678 first-year students, I eliminated a number from analysis. 32 cases had duplicate observations and 2 had triplicate observations because students had answered the questionnaire in different courses. For each of these cases, I randomly assigned one observation as primary and eliminated the other observation or observations, leading to the elimination of 36 observations. I excluded 274 cases either because students did not take the First-Year Student Survey, did not provide a student ID and could not be matched with other data by the Office of Undergraduate Program Assessment, or because students had missing data on one of the key variables, leaving $N = 368$. Of the remaining cases, 72 were participants in linked, learning community FYI courses, 218 were

participants in FYI courses that were not linked, and 78 were first-year students in the non-FYI sociology courses.

Dependent Variables

The students answered twelve questions that represented a modified form of the version of the Sense of Community Index used by Spann (2000). Eight items are a measure of the first dependent variable, Classroom Sense of Community (CSOC), and four questions are a measure of the second dependent variable, University Sense of Community (USOC).

All 12 Sense of Community items had Likert scale response categories as follows: 1 – Strongly Agree, 2 – Agree, 3 – Neither Agree nor Disagree, 4 – Disagree, and 5- Strongly Disagree. The CSOC Index had a Cronbach’s alpha of .828 and the USOC Index had a Cronbach’s alpha of .890. For CSOC, the possible values ranged from 8-40. For USOC, the original possible values ranged from 4-20. I reverse coded these variables so that conceptually positive relationships would yield statistically positive results and vice versa. In addition, I coded indices so that each began at zero, making them more appropriate for analysis using OLS Regression. As a result, the possible range for CSOC changed to 0-32 and for USOC to 0-16.

[INSERT TABLE 1 HERE]

Independent Variables

Learning community participation may affect sense of community. (Royal and Rossi 1996). Students in the FYI program comprised two groups: those participating in learning community courses and those participating in similar courses that were not a part

of the learning community. Students participating in learning community courses were enrolled in an FYI course and linked to a University Studies course which focused on issues like study skills and time management, in some cases using specific examples drawn from the material covered in the FYI course. The control group included first-year students who were enrolled in introductory sociology courses taught to students at all class levels. The dataset distinguished between these three types of students using a single variable which I recoded as two dummy variables, with those in the control group serving as the reference category.

Control Variables

Since respondents were asked to provide their student ID numbers, cases where students had taken the questionnaire in more than one class were easy to identify. Using this information, I created a dummy variable for those who had taken the questionnaire multiple times.

The FYI program offers a variety of courses that fall into either mathematical or scientific subjects or social science and humanities subjects. I created a dummy variable coding each course as a mathematical or scientific subject or as the reference category, a subject falling within the social sciences or humanities. The FYI program also offered some interdisciplinary courses. Since all of these fulfilled a Science, Technology, and Society requirement, I coded these courses with the science and mathematics classes.

The original dataset contained a variable indicating whether students lived in one of two learning community dorms, another on-campus dorm, or lived off-campus. I created two dummy variables corresponding to these three living situations, with those in the off-campus group serving as the reference category.

The dataset contained variables corresponding to students' demographic characteristics. From the original gender variable, I created a dummy variable for male, with female as the reference category.

Again, I drew on the demographic data within the dataset to create a dummy variable to measure race. Given that the institution in this study is a predominantly white institution, it made sense that no other minority group would experience an ideal racial or ethnic fit. In addition, none of the minority groups taken alone constituted a large enough group for analysis purposes. Consequently, I created a dummy variable for white and coded all minority students as the reference category.

Students reported their parent's income on the First-Year Student Survey. Using this question, I created five dummy variables corresponding to those with yearly family income below \$25,000 per year, between \$25,001 and \$50,000, between \$50,001 and \$75,000, between \$75,001 and \$100,000, between \$100,001 and \$150,001, and for those with income of \$150,001 or more. Those in the lowest income bracket served as the reference category.

[INSERT TABLE 2 HERE]

RESULTS

I constructed a series of OLS regression models to test my hypotheses. Those in learning community courses served as the reference category for these models. Since my hypotheses concerned two different dependent variables, I will focus first on CSOC and then move on to USOC.

My first concern is whether students in learning community courses had stronger CSOC than those in standard FYI or non-FYI courses. Since learning community courses

seek to promote greater engagement with material across courses (Gabelnick et al. 1990), I hypothesized that those participating in these courses should have stronger CSOC than non-participants. Model A (see Table 3) shows support for this hypothesis, as does the full model (Model B in Table 3). Net of all other factors, those in linked FYI courses have CSOC that is about 6.29 units stronger than those in non- FYI courses and those in non-linked FYI courses have CSOC that is about 2.24 units stronger than those in the control group. Controlling for race, gender, income, course subject, and residence type, those in learning community courses have CSOC that is about 5.41 units stronger than those in non-FYI courses and those in non-linked FYI courses have CSOC about 2.02 units stronger than those in non-FYI courses. Net of all other factors that might make a difference, participation in learning community courses explains about 12.5% of the variation in CSOC.

[INSERT TABLE 3 HERE]

Moving to USOC, my first concern is whether students in learning community courses had stronger USOC than those in standard FYI or non-FYI courses. Since involvement in activities leads to stronger sense of community (Pretty 1990; Lounsbury and DeNeui 1996; Spann 2000) and participation in learning communities is associated with greater involvement in school activities (Pike 1999), I hypothesized students who participated in learning community courses would have higher USOC than those who did not participate. This hypothesis did not receive support. Neither Model C, which includes only the independent variables, nor the full model (Model E in Table 4) show a significant mean difference in USOC between FYI linked course participants and regular

FYI course or non-FYI course participants, net of CSOC, race, gender, residence type and family income.

[INSERT TABLE 4 HERE]

My second concern is the effect of CSOC on USOC. Sense of community within a smaller subgroup has been found to affect sense of community within the entire group (Royal and Rossi 1996, Spann 2000), so I hypothesized that stronger CSOC would lead to stronger USOC. This hypothesis received support, as shown in Model C (in Table 4) and the full model (Model D in table 4). Net of course type, every one unit increase in CSOC leads to a .1249 unit increase in USOC. Controlling for race, gender, income, exposure to the survey instrument, and course type, every one unit increase in CSOC leads to a .1277 unit increase in USOC. In Model D, one other factor had a significant effect. Those whose parent's incomes were between \$50,000-75,000 had mean USOC about 1.9 units higher than those with family income of \$25,000 or less, net of race, gender, residence type, CSOC, and course type.

DISCUSSION

This study focuses on the effect of participation in learning community courses and its effects on Classroom Sense of Community (CSOC) and University Sense of Community (USOC). Specifically, the study analyzes the effects of participation in learning community courses on CSOC. The study also analyzes the effects of participation in a learning community and CSOC on USOC.

My first prediction, that learning community course participants would have stronger CSOC than non-participants, receives support. Students in linked courses had stronger an CSOC than those in non-FYI courses both net of all other factors and when

controlling for race, gender, income, residence type and course subject. In additional models, not presented here, where I used linked courses as the reference category, those in linked courses also had stronger mean CSOC than those in non-linked FYI courses. This is consistent with the idea that programs that promote student involvement also promote a sense of community (Tinto 1993) and with previous findings that associate stronger subgroup sense of community with participation in learning communities (Royal and Rossi 1996).

This study did not find any demographic factors to have a significant effect on CSOC. While this finding contradicts previous studies of learning community participation and sense of community, it seems consistent with Tinto's (1993) assertion that student background characteristics indirectly affect integration into social and academic communities. Contrary to Spann (2000), course subject was not found to have a significant effect on CSOC. The relatively few science and math courses in the sample may help explain this finding.

In addition, this study finds no significant effect of residence type. This may be because, those students in the sample who lived in learning community dorms, most were learning community course participants rather than students enrolled in non-linked FYI courses or non-FYI sociology courses. Another possibility is that students may experience a stronger sense of community because of living in learning community dorms, but dorms themselves may be the site around which students experience community (Berger 1997).

Participation in a learning community course did not have a significant effect on USOC. These findings contradict past findings of direct effects of learning community

participation on sense of community at the aggregate level (Royal and Rossi 1996). Still, this finding does make sense in the context of Tinto's (1993) conception of membership in college and university communities. Specifically, universities and colleges are composed of heterogeneous groups and students may not need to feel they belong to the total group in order to feel a sense of community in some subgroup. In addition, this upholds Lichtenstein's (2005) finding that participation in a linked course learning community strengthened students' sense of community at the classroom level but not at the university level. Alternately, since all the students in this study are first-year students and all data were collected during their first semester, it may be that they have not had sufficient time to develop a sense of community within the university as a whole.

In contrast, my hypothesis that students with stronger CSOC would have stronger USOC was upheld. Again, consistent with Brodsky and Marx (2001), it makes sense that students who experience a sense of belonging in the classroom have more positive perceptions of the school as a whole. This also duplicates Spann's (2000) finding that increases in CSOC led to increases in USOC.

This study found that the only demographic characteristic to have a significant effect on USOC was a student's family income falling in the \$50,001-75,000 bracket. Students in the \$50,001-75,000 family income category have stronger USOC than those with family incomes below \$25,000, net of race, gender, and class type. No other income categories showed a significant difference from those with family incomes below \$25,000. One possible explanation is that students in the below \$25,000 income bracket might be more likely to work more hours, giving them less time on campus to develop a

sense of community within the university. This explanation seems unlikely, however, since no other higher income bracket was significantly different from this group.

Another possible explanation is that students in the \$50,001-75,000 have better institutional fit (Berger 1997, Astin 1975). Students from this income bracket outnumber students in any other bracket within the first-year class as a whole. Students who come from similar income brackets may be more likely to share similar backgrounds, and therefore share similar values. If these students feel their values are more consistent with those of the institution as a whole, they may experience a stronger sense of community in the university.

This seems odd since I did not find race to have a significant effect on USOC and the school studied is a predominantly white institution, but this may be due to the small number of minority students in the sample. With a small group of minority students, it is more likely that my sample's distribution for sense of community is different from that of the whole population of minority students at the university.

As with CSOC, the type of residence a student lived in does not have a significant effect on USOC. Again, this may be because many students in learning community courses also lived in learning community dorms as compared to those in non-linked FYI and non-FYI courses. Alternately, the greater sense of community generated by living on campus versus off campus, or in learning community versus standard dorms may center on dormitories themselves.

This study had several important limitations. First, the use of a non-probability control group limits my ability to generalize about comparisons drawn between the FYI students and the non-FYI students. In addition, the use of a non-probability comparison

merits caution for interpreting findings of statistical significance. Still, these findings are suggestive and represent an important starting point for future studies comparing the sense of community experienced by students in learning community programs and their peers. In addition, alternate models run with linked courses as a reference category found differences in mean CSOC between those in linked-FYI and non-linked FYI courses, which lends credence to the contrast between linked-FYI and non-FYI groups.

Second, the dataset I used allowed the important advantage of combining assessment information already collected by different departments within a large university, but also has an important disadvantage. Specifically, a large amount of missing data on a number of variables resulted from students who took the FYI survey but did not take the First-Year Survey or because of item nonresponse on one or both of these questionnaires. This resulted in the elimination of a large number of cases, which bears consideration for my conclusions.

Third, since the survey data used in this research is cross-sectional, I cannot draw definitive conclusions about causality. Since respondents did not receive a pre-test, I cannot establish for certain whether stronger CSOC results from pre-existing factors or from participation in learning communities and specific courses.

Fourth, the data used in this research were collected from students who were just entering the university. Since it takes time for new members of communities to develop a sense of commitment and belonging, these students may simply have not had the time to develop a sense of community within the university as a whole. This could explain the finding that whether a student participated in learning community courses did not have an affect on USOC.

Finally, the questions in the CSOC and USOC scales have several limitations. While previous research used these questions, ideally I would have pre-tested and refined them. Though the FYI Program allowed me some input into the questionnaire, questionnaire design and data collection still occurred according to their timeline and dictates. My limited control over the questionnaire design and time constraints prevented sufficient revision of the questions in these scales. Consequently, they contain several weaknesses.

First, the CSOC scale is inconsistent in using a comparative context. While some questions, such as Question 1, ask students to compare the class they are in to their other courses, others, such as Question 5, do not retain this comparison. Comparing the class for which respondents take the questionnaire to other classes establishes a clear and consistent context in which students can form their judgments. Without this explicit context, students may interpret the question differently.

Also, some of the questions in both scales use vague terms that respondents may have interpreted differently. For example, Question 6 on the CSOC scale asks whether respondents feel like they belong in their class, which different respondents may interpret differently. Consequently, the questions may not be measuring the same concept reliably across respondents.

Finally, some questions in both scales may be susceptible to acquiescence. A number of questions are phrased in the affirmative and do not offer a negative option, such as Question 12 from the USOC scale which states “I feel very attached to [name of school].” Since respondents may tend to acquiesce to or agree with survey items (Canell, Miller, and Oksenberg 1981), items that offer only the negative or affirmative may bias

responses. In future research, I would likely phrase these questions in a more balanced manner. Still, the associations between CSOC and learning community participation suggested by this study have significance for future research and for college and university administrators.

CONCLUSION

The findings of this paper suggest that learning community participation makes a difference for students' sense of community in the classroom, but does not directly affect student's attachment to the school as a whole. While the learning community literature often states a primary goal of learning communities is to create a larger sense of community in the school (Lenning and Ebbers 1999), this study suggests that learning community courses do not directly serve this purpose. Still, learning communities do build a stronger sense of community for participants, corroborating past findings that link learning community participation to greater social and academic integration and engagement. Participants may experience stronger sense of community within subgroups of the university, such as classrooms.

More importantly, this study contributes a focus on the sense of community generated by learning community participation as an important end in itself. While the literature on learning communities and student involvement often focuses on the experience of community as a means to greater persistence or academic performance, this study focused specifically on the ability of linked learning community courses to generate stronger sense of community. While retention is an important goal, the potential for positive student experiences should be an important factor in and of themselves when implementing programs in a university. College and university administrators choosing

between programs designed to retain students and improve their college experience should continue to consider learning communities a viable option. Future studies on learning community participation could shed further light on these decisions by incorporating longitudinal designs to establish causality and providing more information about which students participate in learning communities and are predisposed towards higher sense of community.

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APPENDIX

Table 1. CSOC and USOC Items

CSOC $\alpha = .828$

1. I know more of the students in this class than in my other classes.
2. I know the students in this class better than I know students in my other classes.
3. My attendance in this class is better than my attendance in other classes.
4. I have had more conversations outside of class with my peers in this class about our class topics than I have had with peers from other classes.
5. I am involved in this class.
6. I feel like I belong in this class.
7. I can contribute to classroom discussions if I want to.
8. I know the instructor of this class better than I know instructors of my other classes.

USOC $\alpha = .890$

9. I would recommend [name of school] to students in my former high school.
 10. I really enjoy going to school at [name of school].
 11. There is a real sense of community at [name of school].
 12. I feel very attached to [name of school].
-

Table 2: Descriptive Statistics for Key Variables

Variables	Mean	Standard Deviation	Maximum‡	Minimum‡
Non-linked courses	0.5923	---	---	---
Linked courses	0.1956	---	---	---
Classroom Sense of Community	20.7826	5.6656	32	6
University Sense of Community	12.1331	3.1278	16	1
Math or Science course	0.3342	---	---	---
Male	0.4103	---	---	---
White	0.8559	---	---	---
\$25,001-50,000 [†]	0.1222	---	---	---
\$50,001-75,000	0.2119	---	---	---
\$75,001-100,000	0.1983	---	---	---
\$100,001-150,000	0.2282	---	---	---
\$150,001 or more	0.1630	---	---	---
Learning community residence	0.3260	---	---	---
Other on campus residence	0.5298	---	---	---

Note: N=368 [†]all income amounts refer to parent's income. [‡]Amounts refer to actual minimum and maximum.

Table 3: OLS Regressions Predicting Classroom Sense of Community

Variable	Model A	Model B
Adjusted R ²	0.1257	0.1337
Model <i>F</i>	27.38*	5.72*
Constant	18.2179*	17.7410*
	(0.5998)	(1.3437)
Non-linked courses	2.2499*	2.0227*
	(0.6989)	(0.7469)
Linked courses	6.2959*	5.4153*
	(0.6989)	(1.1107)
Math or Science course	---	-0.1963
		(0.4038)
Male	---	0.9739
		(0.5640)
White	---	1.5089
		(0.8417)
\$25,001-50,000 [†]	---	0.0364
		(1.2899)
\$50,001-75,000	---	-1.7181
		(1.2079)
\$75,001-100,000	---	-1.3013
		(1.2128)
\$100,001-150,000	---	-2.3308
		(1.20001)
\$150,001 or more	---	-1.1126
		(1.2564)
Non-learning community on campus residence	---	0.3122
		(0.8344)
Learning community on campus residence	---	-0.9934
		(1.0058)

Note: N=368. Table entries are unstandardized (metric) regression coefficients (standard errors of estimates are in parentheses). * indicates $p < .05$. [†] all income amounts refer to parent's income.

Table 4: OLS Regressions Predicting University Sense of Community

Variable	Model C	Model D
Adjusted R ²	.0446	.0549
Model <i>F</i>	6.71*	2.78*
Constant	9.608*	8.1381*
	(0.65015)	(0.9438)
Non-linked courses	-0.1243	-0.3458
	(0.4090)	(0.4196)
Linked courses	0.0094	-0.4163
	(0.5346)	(0.6550)
Classroom Sense of Community	0.1249*	0.1277*
	(0.0302)	(0.0305)
Male	---	-0.0887
		(0.3265)
White	---	0.4875
		(0.4863)
\$25,001-50,000 [†]	---	1.1554
		(0.7422)
\$50,001-75,000	---	1.9609*
		(0.6973)
\$75,001-100,000	---	0.8560
		(0.6997)
\$100,001-150,000	---	1.1814
		(0.6946)
\$150,001 or more	---	1.3403
		(0.7227)
Non-learning community on campus residence	---	-0.03747
		(0.4755)
Learning community on campus residence	---	0.1562
		(0.5760)

Note: N=368. Table entries are unstandardized (metric) regression coefficients (standard errors of estimates are in parentheses). * indicates $p < .05$. [†]all income amounts refer to parent's income.