

# ***STUDENTS' FEELINGS OF AND DESIRE FOR SENSE OF COMMUNITY IN FACE-TO-FACE AND ONLINE COURSES***

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In this study, face-to-face (FTF) and online students' ( $N = 198$ ) feelings of and desire for sense of community (SOC) in their courses were compared. In support of previous research, FTF students felt more SOC than online students. However, overall, relatively few students (FTF or online) expressed desire for SOC. Additionally, regression analyses revealed that different sets of student characteristics predict FTF and online students' connectedness and desire for more SOC. Results are discussed with regard to the recommendation that SOC should be fostered in FTF and online classrooms, and future directions for research are presented.

## ***INTRODUCTION***

The landscape of higher education has changed significantly in the last decade in terms of the way in which courses are delivered (Lewis, Alexander, & Farris, 1997; Parsad & Lewis, 2008; Wirt et al., 2004). Surveys from the National Center for Education Statistics show that postsecondary institutions are now offering more distance education courses, including courses that are online, hybrid/blended (in which part of the content is delivered online), and other types of distance courses (Parsad & Lewis, 2008). With regard to online courses specifically, Allen and Sea-

man (2007) found that the percentage of total university enrollment that was accounted for by online courses rose from 9.7% to 19.8% in just 5 years (2002 to 2005), and in fall, 2006, nearly 20% of university students were enrolled in an online course. Considering the ways in which online courses provide convenience for students and administrators in terms of flexibility of scheduling and greater access to courses (Parsad & Lewis, 2008), the increasing demand for them is not terribly surprising. However, the rising popularity and availability of online education has brought about concerns of the quality of online courses, specifically as it relates to student learning and

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retention (e.g., Rovai, 2002c). Meta-analyses of the effectiveness of distance education courses, which include analyses of online courses, have shown that student learning is equivalent to learning in face-to-face (FTF) courses (e.g., Bekele & Menchaca, 2008; Bernard et al., 2004; Tallent-Runnels et al., 2006; Zhao, Lei, Yan, Lai, & Tan, 2005). However, a more recent study by Karatas and Simsek (2009) revealed that students in online courses had significantly lower levels of learning and permanency of learned information than their FTF counterparts. Moreover, much of the empirical research to date has shown that retention in online courses is significantly lower than that of face-to-face courses (Carr, 2000; Diaz, 2000; Frydenberg, 2007). Both of these findings are cause for concern for administrators and educators.

### ***SENSE OF COMMUNITY***

One of the variables that has been explored as a potential mediator in the retention of students in distance (including online) education is sense of community (e.g., Carr, 2000; Rovai, 2002a; Rovai & Wighting, 2005). Although there seems to be little debate that sense of community is a positive, if not necessary, component of distance education courses (e.g., Palloff & Pratt, 1999; Roberson & Klotz, 2002; Rovai, 2002a), “community” has not been defined consistently throughout the literature. For example, Etzioni and Etzioni (1999) defined community as having two components: (1) a “web” of relationships between individuals and (2) a commitment to common meanings and values. Meanwhile, Rovai defined “classroom community” as the “spirit, trust, interaction, and commonality of expectation and goals, in this case, learning” (p. 4) that occurs within a classroom environment, either virtual or physical (Rovai, 2002a). Included in this definition are: (1) social community, or connectedness to the group (e.g., the instructor and fellow students) and (2) learning community, or common norms and values and satis-

faction of learning goals (Rovai, Wighting, & Lucking, 2004). Clearly, there are similarities in the definitions; they both include an element of interaction, which may translate into either relationships or connectedness depending on the definition cited, and they both also include a sense of shared values or goals. However, Rovai’s definition is more useful from an empirical standpoint because he also developed a widely used scale of classroom community (the Classroom Community Scale—CCS) that distinguishes between his two dimensions of community (connectedness and learning) and is both reliable and valid (Rovai, 2002c). Rovai also expanded upon his definition of community by delineating a number of factors that appear to contribute to classroom community (Rovai, 2002a). These factors include, but are not limited to, social presence, or the individual’s (e.g., teacher’s or student’s) ability to contribute, socially or emotionally, to the group (Rourke, Anderson, Garrison, & Archer, 2001), and characteristics of the learner (e.g., dependent or self-directed; Grow, 1991). Thus, community, even when defined by a single researcher (in this case, Rovai), is a multifaceted concept, related to a number of classroom, teacher, and student factors.

The concept of community is not new. A learning environment that fosters interaction and social learning has been deemed an essential feature of the higher education experience for over 20 years—well before the advent of online courses (see, for example, Chickering & Gamson’s “Seven Principles of Good Practice in Undergraduate Education,” 1987). It is therefore not surprising that these same pedagogical practices (e.g., activities that foster interactivity and social learning) have also been recommended for the online classroom (e.g., Palloff & Pratt, 1999; Roberson & Klotz, 2002; Rovai, 2002a). However, the online classroom appears to present different challenges to instructors than the face-to-face classroom (Berge, 2008); one of these challenges is the lack of physical presence (Angeli, Valanides, & Bonk, 2003). Research has suggested that a lack of physical presence may

cause or exacerbate online students' feelings of being isolated and disconnected from their instructors, their classmates, and their school (Carr, 2000; Rovai, 2002a). In turn, these feelings of isolation have been associated with lower levels of retention (Carr, 2000; Rovai, 2002a; Rovai & Wighting, 2005; Tyler-Smith, 2006). On the contrary, when online students are given the opportunity to form connections with the classroom community (including the instructor and other students) and SOC is present within a learning environment, students are more satisfied and report higher levels of learning (Hsieh Chang & Smith, 2008; LaPointe & Gunawardena, 2004; Liu, Magjuka, Bonk, & Lee, 2007; Ouzts, 2006; Rovai, 2002a; Swan, 2002; Tsai et al., 2008).

### ***Students' Perceptions of and Desires for SOC***

Empirical studies that have examined students' perceived SOC have shown that there is sometimes great variability in the amount of SOC that students report, even within the same classroom (Brown, 2001; Drouin, 2008; Graff, 2003; Liu et al., 2007; Rovai, 2001). One of the individual characteristics that appears to relate to these differences in perceived SOC is gender. Researchers have found that women usually feel a stronger sense of community than do males, specifically on the dimension of interaction or connectedness with classmates (Graff, 2003; Rovai, 2001; Rovai, 2002c). Additionally, educational maturity appears to have some effect on students' perceived SOC. For example, Rovai, Wighting, and Liu (2005) found that graduate students reported stronger connectedness to their classmates than undergraduate students.

Some researchers have also reported differences in the amount of SOC reported by FTF and online students (Rovai, 2002b; Rovai, Wighting, & Liu, 2005; Wighting, Liu, & Rovai, 2008). Most studies have found that students who take online courses report lower levels of classroom community (SOC shared with classmates) than do students enrolled in

FTF courses (Rovai, 2002b; Rovai et al., 2005; Wighting et al., 2008). However, Shea, Li, and Pickett (2006), found that online and FTF students reported similar levels of connectedness, which, according to Rovai (2002c), is one dimension of community. This discordant finding is notable, especially because Shea and colleagues used the same scale as Rovai (2002b) to measure SOC (Sense of Classroom Community Index; Rovai, 2002b), but it is likely attributable to the different samples used in the studies (students or instructors). Another discrepant finding comes from more recent study by Karatas and Simsek (2009). In their sample of Turkish undergraduates, online and FTF students reported similar levels of interaction with fellow classmates and the instructor (two variables that might contribute to perceived SOC) and overall satisfaction with the course. Interestingly, these authors also found that the FTF students learned more (according to pretest–posttest results) than did the online students, which is notable when one considers that FTF and online students reported comparable levels of learning in the other studies (Rovai, 2002b; Rovai et al., 2005; Shea, Li, & Pickett, 2006; Wighting et al., 2008). These discrepant findings highlight the need for further research examining the differences between FTF and online students in their perceived connectedness with classmates.

The finding that there are differences between FTF and online students' perceived SOC has prompted research into the characteristics (e.g., demographic characteristics, learning styles, and preferences for interactivity) that might contribute to these differences (e.g., Stevens & Switzer, 2006; Qureshi, Morton, & Antosz, 2002; Wighting et al., 2008). Researchers have found that students who take online classes are more mature and experienced (with computers and previous online courses) than their FTF counterparts (Qureshi et al., 2002). Online students are also significantly more likely to be intrinsically motivated (Wighting et al., 2008) (i.e., motivated by personal desires or satisfactions rather than external consequences; Ryan & Deci, 2000), and

typically prefer a less-controlled, more autonomous class structure where they are able to work independently (Cicco, 2007; Stevens & Switzer, 2006; Wighting et al., 2008). In fact, this preference for independence may be one of the primary reasons why some students enroll in online courses. It is therefore possible that any of the student characteristics (e.g., maturity, motivation, or learning style) that differentiate FTF from online learners could also contribute to individual differences in students' perceived SOC. However, in a study by Shea and colleagues (2006), none of the student characteristics they examined (e.g., age, gender, employment status, reason for taking online courses) contributed to differences in students' feelings of SOC. Thus, there is no known empirical evidence that any demographic characteristics contribute significantly to variance in students' perceived SOC. Clearly, this is an area in need of greater empirical attention.

Although a fair amount of research has examined (1) students' perceived SOC, (2) the relationship between perceived SOC, achievement, and satisfaction, and (3) the individual characteristics that might contribute to differences in perceived SOC, relatively little research has focused on students' *desire* for SOC. Moreover, while higher levels of SOC in FTF and online classrooms appear to be related to higher levels of learning and satisfaction overall (Hsieh Chang & Smith, 2008; LaPointe & Gunawardena, 2004; Liu et al., 2007; Ouzts, 2006; Rovai, 2002a; Swan, 2002; Tsai et al., 2008), there is no evidence that SOC in a FTF or online classroom is desirable for all students. In fact, recent research has shown that while some students want to feel SOC in their courses, some students *do not* desire SOC or a social connection with classmates (Brown, 2001; Cameron, Morgan, Williams, & Kostelecky, 2009; Drouin, 2008; Ke & Carr-Chellman, 2006; Liu et al., 2007). This finding may have several important implications. First, because one of the goals of some instructors is to create a feeling of classroom community (to increase student satisfaction

and retention), it is important to determine whether students actually want to feel SOC in their courses and whether this is different for FTF and online students. Second, comparing students who *do not* want SOC in their courses with students who *do* and discerning the characteristics that account for the differences in desire may help educators adjust their teaching practices to reach and teach each group of students more effectively.

### *Plan of Study*

Educators and researchers recommend that instructors create classroom environments that foster SOC (e.g., Palloff & Pratt, 1999; Roberson & Klotz, 2002; Rovai, 2002a, 2002c). However, recent research has suggested that although some students want SOC, not all students desire SOC in their courses (Brown, 2001; Drouin, 2008; Liu et al., 2007). Therefore, in this study, we sought to answer two questions related to students' perceptions of and desire for SOC:

1. What percentage of students (FTF and online) desire SOC in their courses?
2. What factors contribute to students' perceived SOC and desire for *more* SOC in the course?

In order to make meaningful statistical comparisons of students' SOC, we felt that it was imperative that the cohort of students was pooled from classes where there was a high degree of (student-reported) organization (see also Drouin, 2008). We felt this necessary because students' perceptions of SOC and their overall satisfaction with the course appear to be strongly related to how well organized the course is (Shea et al., 2006; Stein, Wanstreet, Calvin, Overtoom, & Wheaton, 2005). Moreover, in courses where there are course delivery or design issues, students may never have the opportunity to develop SOC and/or evaluations of SOC may be confounded by their negative feelings about the course overall (e.g., Ouzts, 2006; Swan, 2000). There-

fore, we consider it an essential design feature (in ours and other studies) that student ratings of the courses included in the analyses were high for organization.

## METHOD

### Sample

Students in seven online sections ( $n = 119$ ) and two FTF sections ( $n = 79$ ) of two instructors' undergraduate psychology courses at a medium-sized midwestern U.S. university participated in this study. This sample of students was selected because they participated in sections of courses that were taken by students who were not necessarily psychology majors and taught by two instructors with experience teaching those courses online and FTF. Ninety-one of the students participating were enrolled in an introductory course, and 107 of the students participating were enrolled in a course higher than introductory level. Because educational maturity (in this case, course level) was a variable of interest, this factor was added to the regression analyses. The demographic characteristics of the students were typical of the enrollment at this university. With regard to age, 55% were under age 22; 29% were 23-30; 10% were 31-40; and 6% were 41 and older. Most were women (72%) and Caucasian (78%), with a small group of Black (4%), Hispanic (1%), Asian (2%) and Native American (2%) students. The mean grade for these courses was a C, with 30% of the students receiving As, 40% receiving Bs, 30% receiving Cs, 9% receiving Ds, and 3% receiving Fs. The online students were on average significantly older ( $p < .05$ ) than the FTF students, but there were no significant differences for any of the other demographic variables.

According to student ratings, the courses were well organized. Most students in the nine sections agreed that the course organization was straightforward (89%), and they were aware of course expectations and approaching deadlines (88%). There were no significant

differences between students' appraisals of the organization of the course based on which instructor they had ( $t[194] = 0.10, p = .917$ ) or whether the course was delivered online or FTF ( $t[194] = 0.67, p = .501$ ).

### Procedure

After completion of the final exam, students were asked to complete a two-part anonymous survey either online within Blackboard (online students) or in their classroom (FTF students) as part of the standard course evaluation. The first part of the survey contained demographic, communication, and course assessment questions, and the second part of the survey measured students' SOC. The response rate for the survey was high; 199 of 244 (82%) of the enrolled students completed the two-part survey.

*End of course survey (Part I).* Students completed a 22-question survey containing demographic questions (e.g., age, gender, computer skills, and work hours) and questions about students' perceived abilities to communicate with the instructor and fellow classmates, students' perceptions of course organization, desire for sense of community in their courses, and desire for more sense of community in that specific course. For the course evaluation and student perception questions, students responded on a 5-point Likert scale (*strongly disagree, disagree, undecided, agree, and strongly agree*). Because a social connection with the group (which may include both fellow classmates and the instructor) appears to contribute to SOC (Rovai et al., 2004), several survey items were combined to form a communication variable (*had opportunity to communicate with instructor, had opportunity to communicate with classmates, had adequate communication with instructor, and had opportunity to discuss/debate with classmates*), which had a Cronbach's alpha of .70.

*SOC survey (Part II).* Sense of community was assessed with the Classroom Community Scale (Rovai, 2002c). The scale comprised 20

self-report items measuring students' perception of learning and connectedness in the classroom. Students were asked to respond to the questions using a 5-point Likert scale (*strongly disagree, disagree, neutral, agree, and strongly agree*), and the maximum score on the whole battery was 80 (40 for each of the subscales). Higher scores indicated a stronger sense of classroom community (overall score) or learning and connectedness (subscale scores). Internal consistency for the overall scale using Cronbach's alpha was .89. Internal consistency for the learning and connectedness subscales using Cronbach's alpha was .83 and .85, respectively.

## RESULTS

The first part of the results contains the summary statistics for the two groups (FTF and online) for the demographic, achievement, and SOC variables. Results from independent samples *t* tests that compared the group means on these variables are also shown. To answer the first research question, we analyzed the percentage of students who do and do not desire

SOC in their courses (for both FTF and online students). Chi-square analyses were then used to determine if there were differences in proportions of students who do and do not desire SOC based on course delivery method (FTF or online). To answer the second research question, we examined the factors that contributed to students' feelings of connectedness to their classmates (CCS subscale) and their desire for more SOC in their present course (experimental measure). Regression analyses were used to determine whether there were significant models for "connectedness" and "desire for more SOC" for FTF and online students and which factors were significant predictors in those models.

## Summary Statistics

Summary statistics for the survey variables are displayed in Table 1. As shown, students enrolled in online classes were, on average, older, taking fewer credit hours, working more hours per week outside the home, and more experienced with computers. There were no differences in students' satisfaction with the amount of SOC in their present course; both

TABLE 1  
Mean Scores and Significant Differences for Survey Variables for Students Enrolled in FTF and Online Courses

	FTF		Online		<i>t</i> (196)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Age <sup>a</sup>	2.05	0.73	2.90	0.95	7.26**
Skill with computers	3.97	1.10	4.27	0.76	2.20*
Credit hours <sup>b</sup>	3.10	0.67	2.42	1.16	5.45**
Hours worked	16.35	12.11	24.47	16.53	4.09**
Grade <sup>c</sup>	2.90	0.95	2.85	1.05	0.34
Learning	28.58	6.93	27.20	6.85	1.52
Connectedness	23.82	6.27	19.78	5.73	4.64**
Desire more SOC <sup>d</sup>	3.06	0.97	2.99	0.90	0.53
Desire SOC/all courses	3.51	1.02	3.17	0.86	2.34*

Note. <sup>a</sup>Age: 1 = under 19, 2 = under 22, 3 = 23-30, 4 = 31-40, 5 = 41+. <sup>b</sup>Credit hours: 1 = 3-6, 2 = 7-9, 3 = 10-12, 4 = 13+.

<sup>c</sup>Grade: 0 = F, 1 = D, 2 = C, 3 = B, 4 = A. <sup>d</sup>In this course.

\**p* < .05. \*\**p* < .01.

online and FTF students were content overall with the amount of SOC. However, students in FTF classes reported significantly more connectedness to their classmates than did students in the online classes.

**Desire for SOC in FTF and Online Courses**

With regard to desire for SOC, only about one-fourth of the students (both online and FTF) expressed a desire for more SOC in their present course, and there were no significant differences between groups. Meanwhile, 47% of the FTF students and 30% of the online students reported a desire for SOC in their courses (see Table 2). This was significantly different for FTF and online students; more FTF students than online students expressed a desire for SOC in their courses. Although significantly more FTF students desired SOC in their courses than did online students, relatively few students expressed desire for SOC in their

courses (less than half and one third of the samples, respectively).

**Factors Contributing to Students' Connectedness and Desire for More SOC in the Course**

A correlation matrix for all of the predictor variables used in the multiple regression analyses is displayed in Table 3.

Multiple regression analyses (using the enter method) revealed significant models for connectedness for both FTF and online students (see Table 4), accounting for 41% and 20% of the variance in these variables, respectively. For FTF students, communication within the course and course level (intro-level or upper-level) emerged as significant predictors in the model, accounting for 22% and 4%, respectively, of the variance in students' feelings of connectedness. Students who felt they had more opportunities to communicate with classmates and the instructor and those in

TABLE 2  
Number and Percentage of FTF and Online Students Who Want to Feel SOC in Their Courses

	<i>FTF</i>	<i>Online</i>	
Do not want SOC	8 (10%)	24 (20%)	$\chi^2(2, N = 198)$
Undecided	34 (43%)	59 (50%)	6.94*
Do want SOC	37 (47%)	36 (30%)	

Note: \* $p < .05$ .

TABLE 3  
Correlation Matrix for Predictor Variables for FTF and Online Students

<i>Variable</i>	1	2	3	4	5	6
1. Age	—	-.10	-.17	.07	.50**	.28*
2. Gender	.10	—	-.18	-.05	-.01	-.06
3. Credit hours	-.27**	-.04	—	.12	.05	-.05
4. Hours worked	.09	.02	-.07	—	.17	.15
5. Course level	.00	.09	.08	.09	—	.20
6. Communication	.06	.07	-.14	.05	.02	—

Note: FTF student correlations displayed above line. Online student correlations displayed below line. Gender: 0 = male and 1 = female.

\* $p < .05$ . \*\* $p < .01$ .

TABLE 4  
Summary of Multiple Regression Analyses for Predicting “Connectedness” in FTF and Online Students

	FTF				Online			
	<i>B</i>	<i>SEB</i>	$\beta$	<i>SR2</i>	<i>B</i>	<i>SEB</i>	$\beta$	<i>SR2</i>
Age	0.15	0.96	0.08	0.00	0.58	0.54	0.10	0.01
Gender	-0.64	1.27	-0.05	0.00	0.18	1.21	0.01	0.00
Credit hours	0.71	0.89	0.08	0.01	1.21	0.45	0.21*	0.04
Hours worked	-0.02	0.05	-0.03	0.00	0.06	0.03	0.16 <sup>†</sup>	0.02
Course level	3.71	1.71	0.25*	0.04	0.34	1.09	0.03	0.00
Communication	0.89	0.18	0.51*	0.22	0.93	0.23	0.36**	0.13
<i>R</i> <sup>2</sup>	.41				.19			
<i>F</i>	7.89**				4.13**			

Note: <sup>†</sup>*p* < .10. \**p* < .05. \*\**p* < .01.

TABLE 5  
Summary of Multiple Regression Analyses for Predicting  
“Desire for More SOC in This Course” in FTF and Online Students

	FTF				Online			
	<i>B</i>	<i>SEB</i>	$\beta$	<i>SR2</i>	<i>B</i>	<i>SEB</i>	$\beta$	<i>SR2</i>
Age	-0.27	0.18	-0.20	0.03	0.06	0.09	0.06	0.00
Gender	0.09	0.24	0.04	0.00	0.19	0.20	0.09	0.01
Credit hours	0.04	0.17	0.02	0.00	-0.02	0.08	-0.02	0.00
Hours worked	0.02	0.01	0.27*	0.07	0.00	0.01	0.01	0.00
Course level	-0.38	0.31	-0.16	0.02	0.19	0.18	0.10	0.02
Communication	0.02	0.03	0.08	0.01	-0.06	0.04	-0.14	0.01
<i>R</i> <sup>2</sup>	.15				.04			
<i>F</i>	2.08 <sup>†</sup>				0.80			

Note: <sup>†</sup>*p* < .10. \**p* < .05.

upper-level courses had a higher degree of connectedness. For online students, students' communication within the course, credit hours taken, and hours worked emerged as significant predictors, accounting for 13%, 4%, and 2%, respectively, of the variance in students' feelings of connectedness. Students who felt they had more opportunities to communicate with classmates and the instructor, those taking a greater number of credit hours, and those working more hours had a higher degree of connectedness.

Multiple regression analyses (using the enter method) revealed no significant model for “desire for more SOC in the present course” for either the FTF or online students (see Table 5). However, for FTF students, the model just missed significance (15% of the variance was accounted for), and hours worked emerged as a significant predictor in the model (accounting for 7% of the variance in students' desire for more SOC in the course). Students who worked more hours outside the home had a greater desire for more SOC in the course.

## DISCUSSION

It has long been recommended that instructors create learning environments that foster SOC (e.g., Chickering & Gamson, 1987). These recommendations, which have been emphasized in both FTF and online classrooms, are based on the idea that when students feel SOC with their classmates, it may promote learning, satisfaction, and retention. Within the context of online education, a number of empirical studies have supported this idea (e.g., Liu et al., 2007; Ouzts, 2006; Rovai, 2002a; Swan, 2002). However, there is also evidence that FTF students report stronger feelings of SOC than their online counterparts (Rovai, 2002b; Rovai et al., 2005; Wighting et al., 2008) and that not all students have a desire for SOC in their courses (Drouin, 2008; Ke & Carr-Chellman, 2006; Liu et al., 2007). Therefore, in this study, we studied samples of FTF and online students to determine what percentage of them had desire for SOC in their courses, whether this was significantly different for FTF and online students, and what factors were related to their desire for SOC. By doing so, we hoped to develop a more detailed picture of the desires and characteristics of today's students (specifically with regard to SOC) in a continued effort to promote learning, satisfaction, and retention.

In terms of differences between FTF and online students, results from this study support findings from previous studies, namely that FTF online students are significantly different from online students with respect to some characteristics and very similar with respect to others. With regard to their differences, our results support previous findings (e.g., Qureshi et al., 2002) that online students are significantly different from FTF students in certain demographic characteristics. Online students in this sample were significantly older, were more skilled with computers, were taking fewer credit hours, and worked more hours outside the home. The results also support previous work (Rovai, 2002b; Rovai et al.; Wighting et al., 2008) that has shown that online

students report lower levels of connectedness to classmates than do their FTF counterparts. With regard to their similarities, the present findings support previous work (e.g., Rovai, 2002b; Rovai et al., 2005; Shea et al., 2006; Wighting et al., 2008) that shows similar levels of reported learning in FTF and online students. In this sample, FTF and online students reported similar levels of learning on Rovai's Classroom Community Scale (2002c) and also had statistically comparable course grades.

In addition to supporting previous research in the area of SOC (specifically SOC research that examines differences between FTF and online students) there were also some novel findings from this study that may add to the literature. Most notably, we found that fewer than half of the students in FTF classes (47%) and fewer than one third of the students in online classes (30%) expressed a desire for SOC in their courses. These findings were surprising; we found the percentages of students who expressed desire for SOC to be astonishingly low overall. The findings were also surprising considering the amount of theoretical and empirical support for the links between SOC and student satisfaction. However, considering the changing landscape of today's undergraduate courses towards more distance education (Parsad & Lewis, 2008) and the suggestion made by recent researchers that not all students desire SOC in their courses (Drouin, 2008; Ke & Carr-Chellman, 2006; Liu et al., 2007), the findings were not entirely unexpected.

We also expected the findings that emerged with regard to differences between FTF and online students in their desire for SOC. In this sample, significantly more FTF students than online students expressed a desire for SOC. Perhaps as Qureshi and colleagues (2002) suggested, FTF students may have more social goals when they enroll in courses or there are certain personality characteristics (e.g., desire to work independently or low desire for social interaction) that would motivate students towards online courses (Ke & Carr-Chellman, 2006; Rabe-Hemp, Woolen, & Humiston,

2009). In any case, there appears to be a significant difference between these students in their desire for SOC, and this difference should be considered when instructors create learning environments for these two types of students (Rabe-Hemp et al., 2009).

Our last set of findings is the least conclusive but provides us with the most avenues for future research. Using multiple regression analyses, we determined that there were some student characteristics that contribute to students' feelings of connectedness and desire for more SOC in their courses. More specifically, we found that in FTF classes, the course level (i.e., intro- or upper-level) and the students' perceived ability to communicate with fellow students and with the instructor contributed a significant amount of variance in students' feelings of connectedness. Upper-level students and those with greater perceived ability to communicate had higher levels of connectedness. Meanwhile, only hours worked outside the home contributed a significant amount of variance in students' desire for more SOC in the present course. Students who worked more hours wanted more SOC. For the online students, perceived ability to communicate with fellow students and instructor was still a significant predictor in students' connectedness, but two other variables, enrolled credit hours and hours worked outside the home, also provided unique variance in the model. Online students who worked more hours outside the home and those enrolled in more credit hours felt more connected to their classmates. There were no significant predictors for the online students for desire for more SOC in the present course.

Although it was no surprise that communication with instructor and fellow classmates emerged as a predictor of students' connectedness, there were some unexpected findings. For example, a variable that one might assume would detract from connectedness to classmates or desire for SOC is working many hours outside the home. Students who work many hours outside the home might be perceived as too busy to prioritize a connection to

classmates, or it might be assumed that they have their social needs met in another environment. However, in this sample, working more hours outside the home had a positive relationship with students' SOC in both FTF and online classrooms: FTF students who worked more hours outside the home desired more SOC in the course, and online students who worked more hours outside the home felt more connected to classmates. This unexpected finding highlights the need for more work in this area to identify the student characteristics that may contribute to students' feelings of and desire for SOC.

### ***LIMITATIONS AND CONCLUSION***

The limitations of this study rest in its subject pool; student data were gathered entirely from psychology courses at a traditional 4-year university. As shown in Finnegan, Morris, and Lee (2009) course discipline (i.e., social science, English and communication, or science, technology, and math) may affect students' participation in online courses, and students' participation (on discussion boards) is more strongly related to their achievement in the social sciences than it is for the other academic disciplines. This variation in the "value" of participation across disciplines suggests that there might also be differences in perceived SOC or desire for SOC across disciplines. Considering the behaviors of students in Finnegan et al.'s (2009) study, it might be expected that social science students might desire *more* participation and interaction with classmates than students in other disciplines. Thus, while we found that relatively few (30%) online students expressed a desire for SOC in their course, this may not be representative of students across disciplines. In fact, it could be that *fewer* students from other disciplines would express for desire for SOC in their courses. This is an empirical question that needs to be addressed in future studies. Additionally, it is not known whether the results found here can be generalized to students who

participate in other types of online programs (e.g., fully online degree programs or programs aimed exclusively at returning adults). Because of the different populations these programs target, it is reasonable to expect that students in these types of programs would have different educational motivations and desires. Again, this is an empirical question and an avenue for future research.

Overall, the results of this study suggest that relatively few undergraduate students taking psychology courses either FTF or online have desire for SOC in their courses. This is an interesting finding, and it doesn't necessarily align with recommendations (e.g., Chickering & Gamson, 1987) to build social learning environments that are interactive and promote SOC. However, even though students don't say that they want to feel SOC in their courses, it does not necessarily mean that they don't want or value the types of interaction opportunities that foster SOC. In other words, perhaps our measure of "desire for SOC" was not capturing students' desire for the interaction opportunities that promote SOC. As an example, a student might say that he doesn't think SOC is very important to him in a course, but then he might cite "interactions with classmates" (an activity strongly related to SOC) as a reason why he attends class (which might have a positive relationship with his satisfaction, achievement, and retention). The relationship between these variables may be relatively complex. Therefore, as a direction for future research, we will be exploring this desire for SOC in more detail by creating a scale (much like Rovai's Classroom Community Scale) that will measure students' desires for the interaction opportunities (e.g., class discussions with classmates, personal communication with instructor) that may be contributing to students' perceived SOC. By doing so, we may be able to distinguish between what students say they want and what they actually want with regard to SOC in the classroom. We also hope to gather more information about the student cohort (using a more comprehensive measure of demographic, personality, and cog-

nitive characteristics), so that we can conduct more detailed analyses of the characteristics that are related to students' desire for SOC. As a result of this work, we hope to be able to provide more specific recommendations to educators for creating learning environments that best meet the needs of today's students.

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