

Embrace Chattering Students: They May Be Building Community and Interest in Your Class

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Abstract

When students chatter in class it can be disruptive, but could that chatter also have some redeeming qualities? We asked students to keep track of their social interactions in a particular class. On days when students had more social interactions than usual, they reported a greater sense of belonging, which was, in turn, related to greater class enjoyment (i.e., a within-person effect). Further, students who tended to have more social interactions than others reported a greater sense of belonging, which was, in turn, related to greater class enjoyment (i.e., a between-person effect). These results held when examining daily ratings of social interactions, belonging, and class enjoyment, and when examining overall end-of-semester ratings. Critically, higher average daily feelings of belonging mediated the effect of the number of average daily classroom interactions on students' end-of-semester class enjoyment and marginally on grades. For educators, promoting peer-to-peer conversation may create a positive effect by which students judge the overall class experience positively.

Keywords

social interaction, belonging, class enjoyment, course evaluation

Chattering students can be a challenge in the classroom. It is difficult to distinguish between on-topic conversation, which many instructors encourage, and off-topic chitchat, which can be disruptive and disrespectful. Abundant research has shown that classroom interactions promote student learning when they are in service of the course, as is the case with collaboration and group work within the framework of active learning (Gaudet, Ramer, Nakonechny, Cragg, & Ramer, 2010; Karpiak, 2011; Prince, 2004; Springer, Stanne, & Donovan, 1999). The current study explores further benefits of promoting student voices in the classroom: We argue that student-to-student interactions, even when off-topic, serve to build a sense of belonging which, in turn, improves students' perceptions of the class period and perceptions of the course and may even improve student learning.

Why might social interactions have positive consequences in the classroom? Copious research using varied methods finds that socializing is one of the most enjoyable events of everyday life (Clark & Watson, 1988; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004; Krueger, Kahneman, Schkade, Schwarz, & Stone, 2009; Vittengl & Holt, 1998; Watson, Clark, McIntyre, & Hamaker, 1992). Unsurprisingly then, students experience greater subjective well-being on days when they have more social interactions than usual, whether those interactions are with close others or mere acquaintances (Berry & Hansen, 1996; Sandstrom & Dunn, 2014). On days when they have more social interactions than

usual, students also report greater feelings of belonging (Sandstrom & Dunn, 2014), which may account for the relationship between social interactions and subjective well-being. Indeed, on days when students report greater feelings of social relatedness, they also report greater subjective well-being (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Thus, prior research suggests that students will enjoy social interactions in the classroom and that those social interactions will foster feelings of belonging.

Students' feelings of belonging in a class matter because these feelings color perceptions of that class. This idea is suggested by one study, in which students in a coordinated studies program, who took all their classes with the same group of classmates, perceived their classes more favorably than control students who took the same classes without the coordinated program (Tinto, 1997). However, it is difficult to determine the extent to which feelings of belonging contributed to the enhanced course perceptions, given the many features of the coordinated studies program that may have each played a role (e.g., interdisciplinary unifying theme across courses, regular

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interdependent teamwork, and presence of numerous faculty members at each course meeting). In another study, students in a class in which the professor deliberately cultivated a sense of community reported greater class enjoyment and greater perceived learning than students taking the same class with a different professor (McKinney, McKinney, Franiuk, & Schweitzer, 2006). However, by varying both the sense of community and the professor, the two variables are confounded, making it impossible to discern the extent to which each influenced perceptions of the course. To avoid these concerns, in our study we measured belonging and course perceptions in eight sections of five different courses (in both psychology and philosophy) taught by seven different instructors, avoiding special selection of students or programs.

Might feelings of belonging affect not only students' perceptions of a class, but also their actual class performance? Some research suggests so. For example, in the aforementioned study in which the professor deliberately cultivated a sense of community, students who felt the greatest sense of community experienced improved exam scores (McKinney et al., 2006). This correlational finding is consistent with experimental evidence testing the effects of reducing feelings of belonging: Inducing social exclusion decreases scores on difficult cognitive tasks, including IQ tests, relative to nonexcluded controls (Baumeister, Twenge, & Nuss, 2002). Moreover, people who are especially susceptible to feelings of belonging uncertainty (e.g., minority students) may disengage from academics and thus suffer from decreased academic performance (Walton & Cohen, 2007). In an attempt to prevent this disengagement, researchers asked minority students in first year to read encouraging statements from upper year students, including suggestions that it is normal to feel uncertainty about belonging in an academic environment, and that those feelings pass with time (Walton & Cohen, 2007). Compared to minority students who did not receive the belongingness intervention, minority students who did receive the intervention earned better grades in the semester immediately following the intervention, and up to 3 years later (Walton & Cohen, 2011). We sought to build on this work by examining whether social interactions in class could impact students' sense of belonging, and thus class perceptions and class performance, regardless of individual differences such as minority status.

In summary, past research has shown that social interactions—even fleeting ones—promote a sense of belonging, which may affect students' perceptions of a course and their grades. Therefore, we predicted that students who had more interactions in class would feel a greater sense of belonging in that class, which might then predict greater enjoyment of the class, and better grades. Because we collected six repeated measures of interactions, belonging, and class enjoyment, we were able to test whether this pattern held both within students (e.g., whether students reported a greater sense of belonging on days when they had more interactions than usual) and between students (e.g., whether students who felt a greater sense of belonging than others tended to enjoy class more).

Method

Participants

A total of 242 students (160 women; $M_{\text{age}} = 19.07$, $SD_{\text{age}} = 1.78$) were recruited from eight large classes ($M_{\text{class size}} = 260$, range = 163–372) at a large, research intensive, culturally diverse university (The University of British Columbia [UBC]). Three additional participants were removed from analyses because they provided fewer than three daily reports, which is the practical minimum for within-person analyses in hierarchical linear modeling (HLM). Six of the classes were 100-level introductory psychology classes (including one section taught by the second author, four with three meetings per week, and two with two meetings per week), one was a 100-level philosophy class (two meetings per week), and one was a 300-level psychology class (three meetings per week).

A subset of 202 psychology students gave us permission to access their final course grade ($M = 70.45\%$, $SD = 10.71\%$, range = 34.1–89.6%). This average represents a B- in the Canadian system, is higher than the typical mean of 67% for courses in the UBC psychology department, $t(201) = 4.58$, $p < .001$, $d = .32$, and did not differ across sections, $F(6, 195) = 1.16$, $p = .33$.

Daily Measures

Interactions. Each day, students reported the number of times they interacted socially with someone in person during class (or immediately before or after class) by responding to the question “How many people did you interact with in class today?” They were asked to count even minimal interactions, but to exclude conversations that were part of a class requirement (e.g., turn to the person sitting beside you and discuss . . .). This measure was reliable across the six assessments, $\alpha = .91$.

Belonging. Daily feelings of belonging were measured with a single item from the Sense of Community Scale (I feel like I belong here; Davidson & Cotter, 1986), on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale ($\alpha = .88$ across assessments).

Class evaluation. Daily class evaluation was assessed with a single item (I enjoyed class), on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale ($\alpha = .75$ across assessments).

End of Semester Measures

Interactions. At the end of the semester, students reported how often they had “Talked to fellow students in class,” on a 1 (*never*) to 4 (*very often*) scale.

Belonging. Belonging was assessed broadly, by means of a composite measure ($\alpha = .82$), created by standardizing the scores for sense of community, social connectedness, loneliness (reverse scored) and social support, and then averaging the

z-scores for the four measures. Sense of community was measured with 8 items from the Sense-of-Community Scale that we modified to refer to a university community instead of a city community (e.g., It would take a lot for me to move away from this school; Davidson & Cotter, 1986), on a 1 (*strongly disagree*) to 4 (*strongly agree*) scale ($\alpha = .82$). Social connectedness was measured with 11 items from the Social Connectedness Scale (e.g., I am able to relate to my peers, Lee, Draper, & Lee, 2001), on a 1 (*strongly disagree*) to 6 (*strongly agree*) scale ($\alpha = .93$). Loneliness was measured with 10 items from the UCLA Loneliness Scale (e.g., How often do you feel alone? Russell, 1996), on a 1 (*never*) to 4 (*always*) scale ($\alpha = .90$). Finally, social support was measured with a subset of 5 items from the Interpersonal Support Evaluation List that had been used in a past study (e.g., When I need suggestions on how to deal with a personal problem, I know someone I can turn to; Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Martire, Schulz, Mittelmark, & Newsom, 1999), on a 1 (*definitely false*) to 4 (*definitely true*) scale ($\alpha = .78$).¹

Class evaluation. At the end of the semester, class engagement was assessed with nine questions taken from the 2011 National Survey of Student Engagement (<http://nsse.iub.edu/>). For example, students reported how often they “Asked questions in class or contributed to class discussions” or “Discussed ideas from your readings or classes with faculty members outside of class.” In addition, students reported how often they “Found class interesting” and how often they “Thought class held [their] attention” on a 1 (*Never*) to 4 (*Very often*) scale. These 2 items were strongly correlated, $r(239) = .83$, $p < .001$, so we averaged them into a composite measure of class enjoyment.²

Procedure

Students were recruited via a class announcement within the first 3 weeks of the semester. On six occasions throughout the semester, they reported their social interactions in a particular class, as well as their momentary feelings of belonging and class enjoyment, by responding to a text message that they received immediately after class ended. Data were mostly complete: A total of 223 students provided all six reports. At the end of the semester, they completed an online questionnaire, on which they reported their interactions, belonging, and class enjoyment more broadly.³

Results

Daily Reports

Given that students provided multiple daily reports, we examined both between-person effects (e.g., do students who have more interactions in class than other students report greater feelings of belonging) and within-person effects (e.g., do students report greater feelings of belonging on days when they have more interactions in class than they usually do). Both can be examined simultaneously through the use of HLM. This

Table 1. Hierarchical Linear Modeling Analyses, Predicting Belonging, and Class Enjoyment From the Number of Social Interactions, and Class Enjoyment From Belonging.

Effect	Number of Social Interactions →		Belonging →
	Belonging	Class Enjoyment	Class Enjoyment
Person level (between)			
Intercept	3.87 (.05)***	3.72 (.05)***	3.72 (.04)***
Interactions (mean)	.11 (.03)***	.07 (.03)**	.56 (.06)***
Day level (within)			
Interactions (slope)	.06 (.02)**	.09 (.03)**	.38 (.05)***

Note. Numbers represent unstandardized coefficients, with standard errors in parentheses. The approximate degree of freedom is 241 for the day-level (text message-level) effects, and 240 for the person-level effects.

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

technique essentially fits a separate regression line for each student (on their three to six daily text message responses), then tests whether the slope of the average regression line, across all students, is significant. To test the relationship between the number of social interactions and feelings of belonging (e.g.), we used the following model:

$$\text{Belonging}_{ij} = \beta_{0j} + \beta_{1j}\text{Interactions}_{ij} + \varepsilon_{ij}, \quad (1)$$

$$\beta_{0j} = \beta_{00} + \beta_{01}\text{Interactions}_j + \mu_{0j} \quad (2)$$

$$\beta_{1j} = \beta_{10} + \mu_{1j}.$$

At the person-level (Equation 1), the social interactions term ($\beta_{1j}\text{Interactions}_{ij}$) refers to a person-centered mean, which allows us to test the effect on belonging when a student has more interactions than they usually do. At the text message-level (Equation 2), the social interactions term ($\beta_{0j}\text{Interactions}_j$) refers to the grand mean, which allows us to test the effect on belonging when a student has more interactions than other students.

First, we tested the relationship between the number of social interactions and both belonging and class evaluations. Analyses revealed both between- and within-person effects. Students who had, on average, more social interactions than other students reported higher average feelings of belonging, $b = .11$, $t(240) = 3.95$, $p < .001$, and greater class enjoyment, $b = .07$, $t(240) = 2.65$, $p = .01$ (see Table 1). Further, on days when students had more social interactions than they usually did, they reported greater feelings of belonging, $b = .06$, $t(241) = 3.32$, $p = .001$, and greater class enjoyment, $b = .09$, $t(241) = 3.22$, $p = .001$.

Next, we tested the relationship between feelings of belonging and class evaluations. Analyses again revealed both between- and within-person effects. Students who felt, on average, more feelings of belonging than other students reported enjoying class more, $b = .56$, $t(240) = 9.75$, $p < .001$ (see Table 1). Further, on days when students felt a

Table 2. Correlation Matrix for Daily and End-of-Semester Measures of Interactions, Belonging, and Class Evaluation.

	Daily		End of Semester				
	Belonging	Class Enjoyment	Interactions	Belonging	Class Enjoyment	Class Engagement	Grade
Daily							
Interactions	.21**	.14*	.51***	.28***	.15*	.31***	-.03
Belonging		.57***	.25***	.56***	.37***	.03	.10
Class enjoyment			.13*	.28***	.50***	.16*	.02
End of semester							
Interactions				.42***	.18**	.25***	.04
Belonging					.22**	.09	.08
Class enjoyment						.14*	.21**
Class engagement							-.10

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

greater sense of belonging than they usually did, they enjoyed class more, $b = .38$, $t(241) = 7.97$, $p < .001$.

End-of-Semester Reports

End-of-semester ratings revealed results similar to those with the daily ratings. Students' overall assessment of the frequency of their social interactions in class was positively related to their overall feelings of belonging, $r(239) = .42$, $p < .001$,⁴ as well as their overall class enjoyment, $r(239) = .18$, $p = .01$, and class engagement, $r(239) = .25$, $p < .001$, but not their grade, $r(239) = .04$, $p = .60$ (see Table 2). Further, students' overall assessment of belonging was positively related to overall class enjoyment, $r(239) = .22$, $p = .001$, but not to class engagement, $r(239) = .09$ or grade, $r(239) = .08$, $ps > .17$.

Although the relationship between the number of social interactions and belonging is similar in size for first-year classes, $r(215) = .44$, $p < .001$, and upper year classes, $r(24) = .35$, $p = .09$, belonging may have greater importance for class perceptions in first-year classes rather than in upper year classes, when students usually have more autonomy in selecting courses that match their interests. Indeed, first-year students' overall assessment of belonging was positively related to overall class enjoyment, $r(215) = .24$, $p < .001$, and marginally related to class engagement, $r(215) = .13$, $p = .06$, whereas for upper year students, belonging was not related to class enjoyment, $r(24) = .05$, or engagement, $r(24) = -.26$, $ps > .22$. These results should be interpreted cautiously, given that we only had one upper year class (and thus one instructor), with a small sample size.

Mediation

We hypothesized that having more social interactions in class would result in greater feelings of belonging, which would in turn result in improved class evaluations. We tested whether the results were consistent with this mediational account by using Preacher and Hayes' (2008) INDIRECT macro to run a bootstrap analysis. The indirect effect of the average

number of daily interactions, via average daily feelings of belonging, was significant for end-of-semester class enjoyment, $CI_{95} = [.02, .07]$, and was marginal for grade, $CI_{90} = [.02, .52]$, but was not significant for overall class engagement, $CI_{90} = [-.01, .01]$.⁵ These results should be interpreted with caution: Although the mediator was measured on a daily basis, and the outcome was measured temporally later (at the end of the semester), causality cannot be inferred because neither the number of interactions nor feelings of belonging were manipulated.

Discussion

Social interactions in the classroom are positively associated with social well-being and perceptions of the class, whether evaluated on a daily basis or in aggregate at the end of the semester. On days when students have more social interactions than usual in the classroom, they evaluate the class more favorably and feel a greater sense of belonging. Additionally, students who have, on average, more social interactions in class than other students evaluate that class more favorably and feel a greater sense of belonging. Average daily feelings of belonging successfully mediated the relationship between average daily interactions and end-of-semester class enjoyment, and partially mediated the relationship between average daily interactions and grades.⁶ This effect emerges despite great heterogeneity in our sample, which includes students taking introductory psychology classes, an upper year psychology class and a philosophy class, all of which were taught by different instructors.

The current results are consistent with the hypothesis that more frequent social interactions lead to greater belonging, which then leads to more positive class evaluations and better grades. Nonetheless, the current studies are correlational. To determine causality, future research should experimentally manipulate the number of interactions that students have in class. However, our research experience suggests that this manipulation is challenging. We attempted such a manipulation in the reported study as well as in a conceptual replication study, without success (see Notes 3 and 6). Future attempts to

manipulate the number of interactions might include randomly assigning a course section to develop a Facebook group or arranging social events outside of class.

Instead of establishing the causal mediational path by manipulating the number of interactions, future research may focus directly on manipulating the mediator (i.e., feelings of belonging). Past research has explored large-scale institutional ways of creating opportunities for students to develop their sense of belonging (e.g., first-year orientations, cohorts of students who take a block of classes together, promoting service learning, Bean & Eaton, 2001–2002). However, due to the broad scale of these programs, it is often difficult to pinpoint whether belonging per se is the mediator of positive outcomes. Instead, instructors might draw on the minimal group's literature to manipulate belonging more precisely, by establishing a class identity through something as simple as a tagline, name, or mascot (Tajfel, 1974).

Another way to build a sense of belonging is through incorporating discussion and group work in class (Kember, Lee, & Li, 2001), which, if structured effectively, may also increase student learning along with belonging. Indeed, many studies, including meta-analyses (Prince, 2004; Springer et al., 1999), have shown that collaborative learning (i.e., group work) leads to improved academic achievement and student perceptions, but little work has attempted to explain the mechanism behind this association. Our research suggests a potential mechanism: perhaps active learning works in part because group work leads to greater feelings of belonging, which in turn leads to improved learning outcomes. Indeed, research has found that certain components of active learning (especially group discussion) are related to social integration (Braxton, Milem, & Sullivan, 2000), which is a term sometimes used to indicate sense of belonging (Tinto, 1997). Future work should integrate these two lines of research, and explicitly test whether belonging mediates the effects of active learning on student perceptions and achievement.

The current research has implications for the student retention literature. A sense of belonging to the campus community is an important part of models of student retention and commitment to completing their studies (Bean & Eaton, 2001–2002; Braxton & Lee, 2012; Tinto, 1997). One survey of students from eight religiously affiliated universities revealed that students who felt like they belonged to the social community at the institution felt more committed to graduating, which then predicted whether they actually reenrolled (Braxton, Jones, Hirshey, & Hartley, 2008). Our data thus suggest that informal student-to-student conversations might contribute to student retention, by increasing feelings of belonging.

The current results suggest that instructors need not worry if a lecture is delayed due to technical difficulties, or if they need a few moments to collect their thoughts: Allowing students the time to interact with their classmates need not be interpreted as a waste of time. Instead, using these moments to encourage students to build a sense of community could have positive implications for class evaluations and possibly

class performance. If students' off-topic chatter interferes in others' learning, the behavior should be managed (for tips, see Goss Lucas & Bernstein, 2009; Morrisette, 2001), however, the current data suggest that there is another way to look at students' chatter: Erring on the side of having patience might be beneficial in terms of building community (and might also improve student learning, course evaluations, and student retention). Moreover, these data offer a new perspective on why active learning, particularly techniques that facilitate peer-to-peer interactions, may enhance the teaching and learning process. Next time you teach, pause to reconsider the role chatter plays in your classroom community.

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Notes

1. For more information about the subset of items that were used, please see Sandstrom and Dunn (2014).
2. The results were similar when these measures were examined individually: Students' overall assessment of their social interactions in class was positively related to their overall class interest, $r(239) = .21, p = .001$, as well as feeling that class held their attention, $r(239) = .14, p = .03$. The indirect effect of the number of daily interactions, via daily feelings of belonging, was significant for end-of-semester class interest, $CI_{95} = [.02, .07]$, and ability of the class to hold students' attention, $CI_{95} = [.02, .07]$.
3. This study was part of a broader design, in which we attempted to manipulate the number of daily interactions that students had in class (see Sandstrom & Dunn, 2014, for details about the analyses and additional measures that were collected). The manipulation was ineffective; students in the experimental condition ($M = 1.96, SD = 1.30$) did not interact with any more classmates than students in the control condition ($M = 1.97, SD = 1.73$), $t(240) = .06, p = .96$. Thus, in the current study we collapse across conditions.
4. Students' overall assessment of their social interactions in class was positively related to their overall feelings on each measure that constitutes the belonging composite: sense of community, $r(239) = .37, p < .001$, social connectedness, $r(239) = .41, p < .001$, loneliness, $r(239) = -.27, p < .001$, and social support, $r(239) = .31, p < .001$. Further, each individual measure of belonging was at least marginally positively related to overall class enjoyment: sense of community, $r(239) = .36, p < .001$, social connectedness, $r(239) = .13, p = .05$, loneliness, $r(239) = -.13, p = .05$, and social support, $r(239) = .12, p = .07$.
5. In order to test the specificity of the mediation effect, we also tested average daily happiness (assessed with a single-item measure; Killingsworth & Gilbert, 2010) as a mediator. There was no evidence for mediation through increased daily feelings of

- happiness for class enjoyment, $CI_{90} = [-.004, .02]$, engagement, $CI_{90} = [-.01, .001]$, or grades, $CI_{90} = [-.07, .40]$.
6. A conceptual replication yielded similar, though weaker, results. A total of 101 introductory psychology students (in a class taught by the second author) completed reports at the end of two consecutive class periods. The number of social interactions in class was marginally associated with belonging (single item measure), $r(101) = .18$, $p = .08$, though not with class enjoyment (2 items), $r(101) = .06$, class engagement (1 item) $r(101) = -.02$, or final exam score $r(101) = .05$, $ps > .56$. Furthermore, there were marginal indirect effects of the number of interactions, via feelings of belonging, on class enjoyment, $CI_{90} = [.004, .09]$, class engagement, $CI_{90} = [.008, .11]$, and final exam score, $CI_{90} = [.03, 1.43]$. As in the reported study, we unsuccessfully attempted to manipulate the number of classmate interactions. Students did not report any more interactions during the session when they were asked to discuss class materials with their classmates ($M = 2.11$, $SD = 1.47$), than during the class when they were asked to reflect individually ($M = 1.98$, $SD = 1.32$), $t(96) = .99$, $p = .32$. Even when prompted to reflect individually, students tended to talk with others, possibly because they had routinely discussed class material with others throughout the semester.
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