

TABLE 1**Demographic information of students.**

	Percentage of chemistry students (raw number in parentheses)	Percentage of geoscience students (raw number in parentheses)
Gender		
Male	44.8 (43)	44.8 (77)
Female	55.2 (53)	55.2 (96)
Ethnicity		
Hispanic	51.6 (49)	45.9 (78)
Asian American	4.2 (4)	6.3 (11)
African American	13.7 (13)	12.6 (22)
Native American	1.1 (1)	5.7 (10)
European American	25.3 (24)	28.7 (50)
Other/mix	5.3 (5)	1.7 (3)
College year		
Freshman	56.8 (54)	50.0 (87)
Sophomore	29.5 (28)	35.0 (61)
Junior	11.6 (11)	11.5 (20)
Senior	2.1 (2)	24.7 (43)

TABLE 2**Characteristics of the surveys.**

Survey	Items	Scale	Cronbach alpha	Example item
SCALE	26 (4 Sub-scales)	1 = Strongly agree to 4 = Strongly disagree	0.89	Other students explained a concept to me. (St-St)
			0.85	The instructor knows my name. (St-Inf)
			0.84	I am acquainted with the instructor. (St-Ini)
			0.81	I can clearly explain new concepts I've learned to others in class. (St-as-In)
MSLQ	8	1 = Not true of me to 7 = Very true of me	0.93	I expect to do well in this class.
SPCI	4	1 = Strongly agree to 4 = Strongly disagree	0.85	The classroom helps engage me in the learning process.

TABLE 3

Group means and standard deviations for all comparisons.

	Male	Female
Learning gains		
Hispanic	0.26 (0.26)	0.27 (0.28)
Asian American	0.13 ^b (0.31)	0.32 ^{ab} (0.14)
African American	0.31 (0.21)	0.28 (0.29)
Native American	0.18 ^a (0.56)	0.35 ^{ab} (0.18)
European American	0.23 (0.29)	0.23 (0.28)
Other/mix	0.25 (0.40)	0.25 (0.31)
SPCI		
Hispanic	2.61 (0.68)	3.26 (1.02)
Asian American	3.06 (0.73)	3.75 (0.84)
African American	2.96 (0.51)	3.33 (0.98)
Native American	2.91 (0.89)	2.82 (0.73)
European American	2.81 (0.99)	3.25 (0.64)
Other/mix	3.15 (0.52)	3.75 (0.56)
Student-Student		
Hispanic	2.72 (0.99)	3.26 ^a (0.69)
Asian American	3.12 (0.87)	1.96 ^{ab} (1.98)
African American	3.36 ^b (0.61)	2.73 (1.11)
Native American	2.75 (1.02)	2.42 (0.93)
European American	2.92 (0.93)	2.83 (1.01)
Other/mix	3.00 (1.52)	2.30 (1.01)
Instructor-Student Formal		
Hispanic	2.81 (1.08)	3.37 ^{ac} (0.78)
Asian American	3.00 (0.98)	1.86 ^{ab} (1.03)
African American	3.48 ^{bc} (0.53)	2.73 (21.30)
Native American	3.33 (0.77)	2.43 ^c (0.98)
European American	2.99 (1.04)	2.87 (1.01)
Other/mix	2.78 (1.54)	2.67 (1.32)
Instructor-Student Informal		
Hispanic	2.65 (0.80)	3.08 (0.58)
Asian American	2.88 (0.68)	2.06 ^{ab} (0.62)
African American	3.18 ^a (0.69)	2.71 (0.96)
Native American	3.15 ^b (0.68)	2.37 (0.41)
European American	2.81 (0.71)	2.77 (0.74)
Other/mix	2.40 (1.05)	3.00 (1.41)
Student as Instructor		
Hispanic	2.64 (0.75)	3.17 (0.62)
Asian American	2.85 (0.81)	1.91 (0.65)
African American	3.40 (0.50)	2.82 (0.94)
Native American	2.85 (1.02)	2.40 (0.74)
European American	2.87 (0.84)	2.72 (0.88)
Other/mix	2.53 (1.17)	2.16 (0.97)

Note. Superscript letters indicate statistically significant difference at $\alpha = 0.05$. All constructs were measured on a scale of 1 to 4 scale (1 = strongly agree; 4 = strongly disagree).