



2006

Students' Race and Participation in Classroom Discussion in Introductory Sociology: A Preliminary Investigation

Jay R. Howard
Butler University, jrhoward@butler.edu

Aimee Zoeller

Yale Pratt

Follow this and additional works at: https://digitalcommons.butler.edu/facsch_papers



Part of the [Educational Sociology Commons](#), and the [Race and Ethnicity Commons](#)

Recommended Citation

Howard, Jay R., Aimee Zoeller, and Yale Pratt. 2006. "Students' Race and Participation in Classroom Discussion in Introductory Sociology: A Preliminary Investigation." *Journal of the Scholarship of Teaching and Learning* Vol. 6, No. 1:14-38. Available from: digitalcommons.butler.edu/facsch_papers/585/

This Article is brought to you for free and open access by the College of Liberal Arts & Sciences at Digital Commons @ Butler University. It has been accepted for inclusion in Scholarship and Professional Work - LAS by an authorized administrator of Digital Commons @ Butler University. For more information, please contact digitalscholarship@butler.edu.

Students' Race and Participation in Sociology Classroom Discussion: A Preliminary Investigation

Jay Howard¹, Aimee Zoeller², and Yale Pratt³

Abstract: This study utilizes observation, survey and interview methodologies to investigate the impact of student race on participation in discussion in introductory sociology courses at a large Midwestern US university with a minority enrollment of approximately 15 percent. While results are mixed there is some evidence that white students participated at a higher rate than minority students. However, in certain circumstances (e.g., discussion of racism), minority students became the “experts” during particular class sessions and participated at a greater rate than did white students. Key Words: Discussion, College Students, Race, Learning, Interaction

I. Introduction and Literature Review

The 2003 Supreme Court decision on race sensitive college admission policies at the University of Michigan once again focused attention on minority students in higher education. Higher education researchers have long been interested in the impact of race on end-of-first-year degree plans (Pascarella, Wolniak, and Pierson, 2003), development of problem-solving and group skills (Terenzini, Cabrera, Colbeck, Bjorklund, and Parente, 2001), preferences towards collaborative learning (Cabrera, Crissman, Bernal, Nora, Terenzini, and Pascarella, 2002), and adjustment to college (Cabrera, Nora, Terenzini, Pascarella, and Hagedorn, 1999; Schwitzer, Ancis, and Griffin, 1999). Researchers have also compared the experiences and perceptions of African-American students who attend historically black colleges and universities with African-American students attending predominately white institutions (Terenzini, Yaeger, Bohr, Pascarella, and Amaury, 1997).

Feagin, Cera and Imani (1996) concluded that African-American college students continue to face many obstacles in higher education. Feagin (2003) found that black college students face a continuum of discriminatory practices that included aggression, exclusion, dismissal of subculture and typecasting which may be responsible, in part, for declining college enrollment and graduation for black Americans. One largely unaddressed issue is whether these obstacles and discriminatory practices impact minority students' participation in college classroom discussions. Antonio, et al (2004) demonstrated that white college students display higher levels of complex thought when they are placed in discussion groups with a black student. Given that participation in classroom discussion has also been associated with learning (Astin, 1985; Johnson and Johnson, 1991; Kember and Gow, 1994; McKeachie, 1990), critical thinking

¹ Professor of Sociology and Head of Division of Liberal Arts, Indiana University Purdue University Columbus, 4601 Central Ave., Columbus, IN 47203, jhoward@iupuc.edu. This research was supported by grants from the Indiana University Purdue University Indianapolis Office for Professional Development and the Mack Center at Indiana University for Inquiry on Teaching and Learning.

² Adjunct Lecturer in Sociology, Indiana University Purdue University Columbus, 4601 Central Ave., Columbus, IN 47203, anZoelle@iupui.edu

³ Yale Pratt was graduate research assistant at Indiana University Purdue University Indianapolis during the data gather portion of this project. He was tragically killed in an automobile accident before the project was completed. Howard and Zoeller wish to acknowledge his contributions to this study by including him as a co-author.

(Garside, 1996; Smith, 1977; Weast, 1996), and degree completion (Tinto, 1975; Tinto, 1997), it makes sense to ask, does race matter in participation in classroom discussion? This study seeks to address this void in the literature on student participation by addressing the role of student race in classroom discussion in introductory sociology courses at a large urban university with a racially mixed student population.

Studies of student participation in discussion in the college classroom have addressed a number of variables thought to have significant impact including student gender, student age, instructor gender, class size, instructor traits, student traits, and classroom environment. The variable most often examined is student gender. This line of research springs from Hall and Sandler's (1982) "chilly climate" thesis which postulated that patterns of interaction and behavior in the college classroom create a climate that is less hospitable to female students than to male students.

Despite the ongoing concern with student gender in classroom participation, the research support has been mixed. A number of studies have found that males participate more frequently than females (Auster and MacRone, 1994; Brooks, 1982; Crawford and MacLeod, 1990 [in their small college sample, but not in their university sample]; Crombie, Pyke, Silverthorn, Jones, and Piccinin, 2003; Fassinger, 1995; Karp and Yoels, 1976; O'Keefe and Faupel, 1987; and Statham, Richardson, and Cook, 1991). Brooks (1982) concluded that males participate more only in courses taught by female instructors. Other studies have suggested the opposite – males participate more frequently in male taught courses (Pearson and West, 1991; Sternglanz and Lyberger-Ficek, 1977) but not in courses taught by female instructors. Fassinger (1995) and Karp and Yoels (1976) found that females participate more in courses taught by female instructors than in courses taught by male instructors. A large number of studies found no significant difference in participation based on student gender (Boersma, 1981; Constantinople, Cornelius, and Gray, 1988; Corneilius, Gray, and Constantinople, 1990; Crawford and MacLeod, 1990 [in their university sample]; Heller, Puff, and Mills, 1985; Howard, James, and Taylor, 2002; Jung, Moore, and Parker, 1999). One possible explanation for the lack of significance of student gender is the presence a high percentage of females in the classroom. However, in their study which utilized a survey methodology, Crombie, Pyke, Silverthorn, Jones, and Piccinin (2003) failed to find a significant relationship between percentage of female students in a class and students' participation.

Several studies have demonstrated that student age has a stronger impact than student gender on participation in classroom discussion. Nontraditional students (25 years of age or older) have been consistently shown to participate more frequently than traditional students (less than 25 years of age) (Howard, Short, and Clark, 1996; Howard and Henney, 1998; Howard and Baird, 2000; Howard, James, and Taylor 2002; Jung, Moore, and Parker, 1999). However, Crombie, Pyke, Silverthorn, Jones and Piccinin (2003) found no differences in participation by student age in a study that utilized self reports rather than observation. One study by Faust and Courtenay (2002), who observed only a single section of a single course, found the opposite – that traditional students contributed to class discussion more frequently than did nontraditional students.

Instructor gender is another variable that has been examined in relation to students' participation in classroom discussion. The results have again been mixed. Some studies have found that there is more discussion in courses with female instructors (Canada and Pringle 1995; Constantinople, Cornelius, and Gray, 1988; Crawford and MacLeod, 1990; Fassinger, 1995; Howard and Baird, 2000; Howard, James, and Taylor, 2002; Karp and Yoels, 1976; Pearson and

West, 1991; and Statham, Richardson, and Cook, 1991). While none of the studies has suggested that students participate more frequently in courses with male instructors, numerous studies have failed to find a difference based on instructor gender (Auster and MacRone, 1994; Cornelius, Gray, and Constantinople, 1990; Crombie, Pyke, Silverthorn, Jones, and Piccinin, 2003; Heller, Puff, and Mills, 1985). Of these studies that failed to find an effect of instructor gender all but one (Cornelius, Gray, and Constantinople 1990) relied on student self reports via survey rather than observation. This may account for the lack of significant findings. Karp and Yoels (1976) reported that while students reported no effect of instructor gender in their survey responses, based on observations of actual classroom behaviors female students participated significantly more in female taught courses than in male taught courses. Howard and Baird (2000) and Howard, James and Taylor (2002) had the same result with survey responses failing to find a relationship between instructor gender and participation, but observations of classroom behavior revealing that students participate more frequently in courses with female instructors.

Class size is another variable frequently found to have a significant impact on student participation in discussion. Most studies have found that more interaction occurs in smaller classes (Auster and MacRone, 1994; Constantinople, Cornelius, and Gray, 1988; Cornelius, Gray, and Constantinople, 1990; Crawford and MacLeod, 1990; Fassinger, 1995; Howard, Short, and Clark, 1996; Howard and Henney, 1998; Neer and Kircher, 1989). However, Crombie, Pyke, Silverthorn, Jones, and Piccinin (2003) and Karp and Yoels (1976) failed to find a significant impact of class size.

Fassinger (1995) argued that instructor traits (e.g., gender) have little impact on student participation. Instead, student traits (confidence, comprehension, interest, preparation) and class traits (size, emotional climate, interaction norms, frequent large group discussions) were more important influences on participation. Likewise, Aitken and Neer (1993) concluded that it is a student trait (motivation or the lack thereof) that best explains students' lack of participation. However, it is clear that instructor behaviors can influence student traits like comprehension and interest and can influence class traits such as emotional climate and interaction norms. Nunn (1996) argued that it is instructor teaching techniques (such as praise, posing questions, asking for elaboration, and using students' names) that significantly improve levels of discussion. Thus Nunn concludes that instructors do play an important role in student participation. Fritschner (2000) found that students were more likely to participate in 300-400 level courses than in 100-200 level courses.

Despite this extensive research examining numerous variables, to date research focusing on classroom discussion has not directly addressed the impact of race on college students' participation. However, some have argued, based on personal experience rather than systematic research, that minority students at predominately white institutions manifest a fear of failure that may cause them to participate in class discussions less frequently than white students (see for example, Saufley, Cowan, and Blake, 1983). Likewise, Asian students enrolled in Australian universities have been presumed to bring learning experiences that favor passive rote reproduction and teacher centered learning in contrast to the active learning and critical thinking required in class discussions which are more typical in Australia and the West (see for example, Ballard and Clanchy, 1991). Adams (1992) argued that men and women of color have alternative cultures which imply a need for more collaborative and less competitive instructional design. One possible interpretation of Adams' (1992) argument is that students of color may be better prepared for participation at least in collaborative classroom discussions. Hardiman and Jackson (1992) argue that instructors' failure to understand and respect the racial identity of

students can lead to volatile situations in the classroom and on campus. Weinstein and Obeir (1992) suggest that majority group students can “trigger” (p. 44) defensive and intense emotional reactions from minority group members that can easily silence classroom discussion altogether. Each of these studies of the minority students rely primarily on personal experience and reflection rather than systematic research to determine whether minority students participate in classroom discussion at a different rate than majority students. This investigation seeks to fill this void.

II. Methodology

This study was conducted at both [identifying information removed] and [identifying information removed]’s satellite campus in [identifying information removed]. A triangulation of research methods was utilized to examine students’ participation in classroom discussions in introductory sociology courses. As noted above, multiple methods are important when examining student participation in the college classroom. While surveys allow researchers to access students’ attitudes and beliefs about their own participation, often students’ self reports are not supported by observations. Thus this study utilizes observation, survey and interview methodologies to provide the fullest possible picture of student participation in the college classroom.

Both for convenience and in order to limit the effect of variation in the curriculum on participation in discussion we chose to limit our investigation to introductory sociology courses. All eleven instructors teaching in the fall 2003 semester at [identifying information removed] were invited to participate in the study. Nine instructors (six males, three females) agreed to participate. Two instructors (one male, one female) chose not to participate. One section of each of the nine instructors’ introductory sociology courses were observed for four class meeting sessions. The observations were spread over the course of the semester with one observation occurring approximately every four weeks. During our observations, we kept track of student participation in discussion by using a seating chart to note students’ gender, approximate age (traditional or nontraditional), and race (African-American, Asian, Hispanic, Mixed, or White) as it appeared to the observer. Any verbal response by students regardless of length or content was counted an instance of participation. Thus a brief response (e.g., “Can you repeat the definition?”) counted equally with a longer comment or question that demonstrated critical thinking. We also kept more general field notes regarding activity in the classroom. Eight of the nine courses were “regular sections” with a maximum enrollment of 45 students. One of the observed courses was a “mass lecture” section with an enrollment of 182 students at the start of the semester. A total of 36 class meetings were observed with 1402 students in attendance (15.5 percent non-white).

During the last three weeks of the semester all students in attendance in 15 sections of Introduction to Sociology (three instructors taught more than one section) were given a survey to assess students’ perceptions of their participation in classroom discussion and their reasons for participation and for non-participation. A total of 441 students completed the survey (13.2 percent non-white).

Finally, the researchers interviewed the nine instructors and ten students from the courses observed. We sought to interview an equal number of white and non-white students. This proved to be a since there were relatively few non-white students. Also because [identifying information removed] is a commuter campus, it was difficult to schedule interviews with students who frequently left campus whenever they were not in class. Numerous students agreed

to be interviewed, but then failed to appear at the agreed upon time. Eventually, were are able to interview five white and five non-white students, a significantly fewer than the 20 students we had hoped to interview. In the interviews, students were asked about the effectiveness of discussions for facilitating learning and their perceptions of the students who participate most frequently in class discussion.

III. Results and Discussion

Table 1 presents the mean number of interactions per student per class session by student race, student gender, and student age. The typical 75 minute class session averaged almost 50 interactions from the 39 students in attendance. This resulted in a mean of 1.27 interactions per student. However, a caution is necessary. Computing mean interactions can be somewhat misleading because as Table 1 indicates over two thirds of all students present fail to contribute to discussion in a typical class session. On average, around 12 students, or 30 percent of those present, participate in discussion for a mean of 4.3 interactions per student participant.

Table 1 also presents results by student race. An ANOVA comparison of means is used to test for significant differences in mean interactions per student and Kendall's tau is used to test for significant differences in the percentage of students participating. The vast majority of nonwhite students were African American (72.8%). Because there were so few Asians (15.6%), Hispanics (6.0%), and mixed-race (4.6%) students in the sample, meaningful comparison of minority racial groupings were not possible. Therefore, students were grouped by whites (84.5 percent of those present) and non-whites (15.5 percent of those present). The results reveal no significant differences between whites and non-whites. The percentage of whites and non-whites participating in classroom discussion is nearly identical (29.6 percent of whites compared to 29.5 percent of non-whites). White students had a higher mean interaction per student (1.31 to 1.05); however this difference was not statistically significant. The lack of significant findings may be due to the nature of the sample. If it were possible to separate the various minority groups, the results may have varied. For example, including Asians in the same category with African Americans and Hispanics may be masking differences between racial groupings.

Interview evidence indicated that students themselves were uncertain whether minority students participated at the same rate as did white students. In their comments students would quickly note that because there were so many more white students in class, most contributions to class discussion came from white students. But they were unsure whether minority students participated at a rate that was proportional to their number. For example, a nontraditional black female student noted, "There were not too many minorities in the class. There were more whites to speak out. The minorities speak out just as much. But it doesn't look like it because...there were not many minorities in the class." Instructors, on the other hand, tended to perceive minority students as less frequent contributors to discussion. One female instructor remarked, "I think it is always hard to have minorities be comfortable enough to speak up." Another female instructor stated, "I feel that there is less verbal discussion among minorities. I don't know why. African American students speak and respond less."

In our observations, the participation of white and non-white students most often was very similar. However, there were occasions when non-white students became the class "experts" on a given topic, such as police profiling. On these occasions, the non-white students became the dominant talkers for the class session. One nontraditional white male student commented, "When we were discussing race, I noticed that a lot of people of color really seemed

Table 1: Interactions per class session (ANOVA Comparison of Means) and percent of students participating (Kendall's tau) by student race, student gender, and student age.

	Mean Interaction Per Session	Mean Attend	Mean No. Students Participate	Percent Students Participate	Mean Interaction Per Student	N
All	49.4	38.9	11.5	29.6	1.27	1402
Whites (84.5%)	43.1	32.9	9.8	29.6	1.31	1185
Non-whites (15.5%)	6.3	6.0	1.8	29.5	1.05	217
Males (28.9%)	12.3	11.3	2.9	25.4*	1.09	405
Females (71.1%)	37.1	27.7	8.7	31.3*	1.34	996
Traditional (89.7%)	33.2	34.9	9.1	26.1***	.95***	1258
Nontraditional (10.3%)	16.3	4.0	2.4	60.4***	4.08***	144
White Males (24.3%)	11.3	9.5	2.5	26.7	1.19	341
Non-white Males (4.6%)	1.0	1.8	.3	18.7	.55	64
White Females (60.2%)	31.8	23.4	7.2	30.8	1.36	843
Non-white Females (10.9%)	5.4	4.3	1.4	34.0	1.25	153
White Traditional (77.3%)	30.1	30.1	7.9	26.1	1.00	1084
Non-white Traditional (12.4%)	3.1	4.8	1.3	25.9	.64	174
White Nontraditional (7.2%)	13.1	2.8	1.9	67.3**	4.67***	101
Non-white Nontraditional (3.1%)	3.2	1.2	.5	44.2**	2.70***	43
N	1779		415		1779	1402

*** Significant at the $p < .001$ level

** Significant at the $p < .01$ level

* Significant at the $p < .05$ level

to get involved on that topic. It seemed to hit more close to home.” Instructors noted the same tendency, “When we were talking about racism and talked about Hispanics, he [Hispanic student] talked more than he usually does (female instructor).”

Table 1 also reveals that female students had a slightly higher, but not statistically significant, mean number of interactions per class session compared to 1.09 for male students (1.34 to 1.09). Contrary to the chilly climate thesis, a significantly higher percentage of female students participated in class discussion than male students (31.3 to 25.4%).

Students differed significantly in their rates of participation by age (see Table 1). Nontraditional students, those the observers judged to be age 25 or older, had a mean number of interactions per class session which was over four times that of traditional students (4.08 to .95) and the percentage of nontraditional students who participated in discussion was more than double that of traditional students (60.4 to 26.1 percent).

Table 1 also presents a comparison of students by both race and gender. White male students had a higher mean number of interactions per class session (1.19 to .55) and a higher percentage of those present participating (26.7 to 18.7) than their non-white male counterparts. However, neither difference was statistically significant. Again, the lack of significance may be due to sample size. Only 64 non-white males (4.6% of all students) were in the sample, making demonstrations of statistical significance difficult. White and non-white female students were much closer in terms of mean interactions per class session (1.36 to 1.25). While the difference is small and is not statistically significant, it is interesting to note that the percentage of non-white females participating in discussion was slightly higher than that of white females (30.8 to 34.0).

When we compared students by both race and age (see Table 1), we again found white traditional students had a higher mean interaction per student (1.00 to .64) when compared with non-white traditional students. The percentage of students participating was nearly identical (26.1 to 25.9%). These differences were not statistically significant. For nontraditional students, however, whites had a significantly higher mean interaction per class sessions than did non-whites (4.67 to 2.70). The nontraditional whites also had a significantly higher percentage of students participating compared to nontraditional non-whites (67.3 to 44.2%).

Table 2 presents a comparison of mean interactions per student per class session and the percentage of students participating in discussion by student race and instructor gender. Nearly 80 percent of students observed, including those in the mass lecture class, were in courses taught by male instructors. A significantly higher percentage of students in female instructor courses participated in discussion as compared to students in male instructor courses (47.0 to 25.2%). Students in female taught courses also had a significantly higher mean number of interactions per class sessions (2.69 to .91). These results support the previous findings that students participate more in female taught courses than in male taught courses. However, female instructors had the advantage of teaching smaller classes (23.8 to 39.9 students), a variable shown to significantly effect students' interaction in previous studies (see, for example, Auster and MacRone, 1994). Female instructors also had a higher percentage of nontraditional students in their courses (26.0 to 6.3%). As Table 1 demonstrated, nontraditional students have a significantly higher mean number of interactions per class session. These differences in mean class size and percentage of nontraditional students may account for the differences in student participation in male and female instructors' courses.

Table 2: Interactions per class session (ANOVA Comparison of Means) and percent of students participating (Kendall's tau) by student race and instructor gender

	<i>Mean Interaction Per Session</i>	<i>Mean Attend</i>	<i>Mean No. Students Participate</i>	<i>Percent Students Participate</i>	<i>Mean Interaction Per Student</i>	<i>N</i>
Male Instructor (79.7%)	36.3	39.9	10.0	25.2***	.91***	1117
Female Instructor (20.3%)	64.0	23.8	11.2	47.0***	2.69***	285
White Students Male Instructor (67.5%)	38.7	39.5	10.2	25.9	.98	947
Non-white Students Male Instructor (12.1%)	3.5	7.1	1.5	21.2	.49	170
White Students Female Instructor (17.0%)	51.9	19.8	8.8	44.5	2.62	238
Non-white Students Female Instructor (3.4%)	11.9	3.9	2.3	59.6 ⁴	3.04	47
N	1779		415		1779	1402

*** Significant at the $p < .001$ level

While white students in male instructors' courses had a higher mean interaction per class session (.98 to .49), the difference was not statistically significant. The percentage of white and non-white students who participated in male instructors' courses was very similar (25.9 to 21.2%). Interestingly, non-white students in female instructors' courses had both a higher mean interaction per student (3.04 to 2.62) and a higher percentage of non-white students in female instructors' courses participated relative to white students (59.6 to 44.5%). However, neither difference was statistically significant.

Regardless of instructor gender, in our observations we could quickly identify which instructors' classrooms included significant amounts of student discussion. When an instructor whose teaching style included significant use of discussion entered the classroom, informal interactions would begin immediately. Sometimes it was the instructor greeting and engaging individual students, but most often it was students initiating interactions with the instructor. Often the topic was related to course administration (e.g., "Do you have our papers graded yet?"), but just as frequently the conversation was unrelated to the course. These instructors had clearly built relationships with their students so that the students felt very comfortable interacting with them. Other instructors would enter the room and either be greeted with silence or would

⁴ Significant at $p < 0.07$

face the challenge of gaining students' attention when they were busy talking among themselves. This was particularly a problem in classes that consisted predominately of traditional college age students. For example, in a class that was 97 percent traditional students we observed the following.

The instructor is having trouble getting students' attention at start of class. He begins his lecture even though many students are still engaged in side conversations. The conversations at the rear of room continue very audibly even after class has clearly started. A student sitting in the front complains to the instructor that she cannot hear. The instructor chides those still chatting, "Your talking is preventing classmates from being able to hear." The talking softens but doesn't completely stop.

Not only did the classes for these instructors not begin with productive student interaction, it was often 30 or more minutes into the session before the instructor first posed a question to the class. By this point, students appeared to have already gotten the, intended or unintended, message that their participation was neither needed nor desired. These late attempts to engage students in discussion were frequently met with silence from the students. Instructors would pause awkwardly for a second or two, answer their own question, and return to their lecture. We observed both male and female instructors whose classes resembled the above, but most frequently larger (30 or more students) male taught courses with very high percentages of traditional students were the classes with the least interaction.

Table 3 presents a comparison of mean interactions per student and the percentage of students participating by student race and class type (regular session versus mass section). Despite the fact that the mass class section had a very interactive instructor whose efforts resulted in more interactions per class meeting session and a higher mean number of students participating, the mean interaction per student was significantly lower than that of the regular sessions (1.83 to .40) as would be expected. Likewise, the percentage of students participating in the regular sections was significantly higher than that of students in the mass section (37.3 to 17.8%). These results are simply a reality of mass sections. It would be difficult, if not impossible, for all 138 mass section students present to make even a single comment in a course meeting. When comparing white and non-white students by class type, we found no significant differences. White students in regular sections had a slightly higher mean interaction per student when compared with non-whites (1.89 to 1.50), but the percentage of students participating was nearly identical (37.6 to 36.2%). Whites and non-whites in the mass class section had identical mean interactions per student (.40) and a very similar percentage of whites and non-whites participated (17.3 to 20.0%).

In sum, while we found significant differences in the participation by student age, student gender, instructor gender and class type. Significant differences by student race were relatively few. White non-traditional students had a higher mean number of interactions and a higher percentage of participation in discussion compared to non-white nontraditional students. However, reversing the trend, non-white female students participated at a slightly higher, but not significant rate than did white females. White students in courses taught by female instructors had a lower mean number of interactions and a lower percentage participated in discussion compared to non-white students in courses taught by female instructors.

Table 3: Interactions per class session (ANOVA Comparison of Means) and percent of students participating (Kendall's tau) by student race and class type (regular versus mass section)

	Mean Interaction Per Session	Mean Attend	Mean No. Students Participate	Percent Students Participate	Mean Interaction Per Student	N
Regular Section (60.6)	48.7	26.6	9.9	37.3***	1.83***	850
Mass Section (39.4%)	55.8	138.0	24.5	17.8***	.40***	552
Regular Section Whites (85.1%)	42.7	22.6	8.5	37.6	1.89	723
Regular Section Non-whites (14.9%)	6.0	4.0	1.4	36.2	1.50	127
Mass Section Whites (83.7%)	46.2	115.5	20.0	17.3	.40	462
Mass Section Non-whites (16.3%)	9.0	22.5	4.5	20.0	.40	90
N	1779		415		1779	1402

*** Significant at the $p < .001$ level

Table 4 presents the results of another way to test for differences in participation - linear regression of numerous variables on mean student interactions in order to more directly assess the impact of these variables. The first regression model (I) presents results of an analysis that includes the students enrolled in the mass section of Introduction to Sociology. Because the dynamics of interaction in the mass class may be significantly different from that in the regular sections, Table 4 also presents an analysis that excludes the students in the mass section (II). The adjusted R square for the first analysis (including the mass section) was only .146. Despite the lack of significance when we compared mean interactions by white and non-white students (see Table 1), we found that when we controlled for other variables in the regression analysis, being white has a significant positive affect on the mean number of student interactions per class session. Other variables with significant positive effects include student age (nontraditional = 1), percentage of non-traditional students in the class, and front third seating. The percent of non-white students in the class had a significant negative effect. This finding suggests that when more non-white students are in the class, students as a whole may be less willing to participate.

Observations provided some further insight. As noted above, there were occasions when non-white students became the “experts” on a given topic in class and became the dominant talkers. Interestingly, this participation was not prompted by “triggers” (Weinstein and Obeir 1992) which provoked defensive and emotional reactions from non-white students. In each case, the non-white students readily volunteered to share their experience with and knowledge of the topic. During one class session when the topic was racial stratification, four non-white students became the dominant talkers for that class session. However, some white students, through their body language, shaking of heads, sighs, and crossing of arms, seemed to disagree with the perspective of their non-white classmates, but did not verbally challenge what was being said. Thus it may be that when minority students speak up regarding controversial topics, white students, out of fear of appearing to be racist, stop participating. In an interview a white male instructor commented:

When we get to the units having to do with race and ethnicity, I’ve noticed that most of the white students don’t want to hear it anymore. They really don’t. When I am talking about race, or homosexuality, they are mostly silent. If anyone is going to talk, it’ll be the African Americans.The white students usually back down on their views. I think that part is unfortunate. They pick up that I am a liberal. Therefore, my views on race are going to be closer to the African-American students’ views. So it would be silly to alienate your instructor. If that is true, it is a shame.

The effect of student gender (female = 1), instructor gender (female = 1), and attendance in session were negative in direction, but not significant in model I. The negative direction of the effect of instructor gender suggests that the higher mean interactions and higher percentage of students participating in female taught courses (see Table 2) are more likely due to the smaller class size and the higher percentage of nontraditional students present than to instructor gender.

The adjusted R square for the second analysis (excluding the mass class section) was .130. Being white had a significant positive impact on mean student interactions. Student age (non-traditional = 1) and percent nontraditional also had significant positive effects. Attendance in the session had a significant negative effect. As class size went up, the amount of student participation went down. The impact of percent non-white went from negative to positive and was not significant in the second model. Front third seating, while significant in model I, was not significant in model II. The effects of student gender and instructor gender remain negative but not significant. Percent female remains positive, but not significant.

As noted above, there is a need for caution in examining mean interactions per student. As previous research has demonstrated (see for example, Howard and Baird 1998 and Karp and Yoels 1976) there are no mean students. There are only talkers (students who participate frequently) and non-talkers (students who only rarely participate in discussion). Therefore, it is important not only to examine mean interactions per student, but also to look at which students are most likely to become talkers.

A. Talkers and Non-talkers

The norm of the consolidation of responsibility was first identified by Karp and Yoels (1976). The consolidation of responsibility suggests that in the typical college classroom a small number of students will assume responsibility for speaking on behalf of the entire class. For the purposes of this study, we refer to these students as “talkers.” The rest of the students will

Table 4: Linear regression of mean student interactions by student gender, age, and race, percent female, percent non-white, percent non-traditional, instructor gender, attendance in session, and seating (I) including mass class and (II) excluding mass class.

<i>Variable</i>	<i>I</i>		<i>II</i>	
	<i>B</i>	<i>Beta</i>	<i>B</i>	<i>Beta</i>
Student Race (White =1)	.63*	.062	1.08*	.084
	(.26)		(.43)	
Student Gender (Female=1)	-.12	-.015	-.16	-.018
	(.21)		(.29)	
Student Age (Non-traditional=1)	1.71***	.141	1.91***	.145
	(.34)		(.49)	
Percent Female	.027 ⁵	.070	.00	.008
	(.02)		(.02)	
Percent Non-white	-.06*	-.067	.00	.001
	(.02)		(.4)	
Percent non- traditional	.07***	.246	.03*	.113
	(.01)		(.02)	
Instructor gender (Female=1)	-.32	-.035	-.26	-.026
	(.30)		(.38)	
Attendance in session	-.00	-.041	-.13***	-.173
	(.00)		(.04)	
Front Third Seating	.99***	.125	1.24	.131
	(.20)		(.31)	
Constant	-1.15		3.24	
	(1.32)		(2.29)	
Adjusted R Square	.146		.130	
N	849		1402	

*** Significant at the $p < .001$ level

* Significant at the $p < .05$ level

remain either non-contributors to class discussions or only occasional contributors. These students we label “non-talkers.”

Table 5 presents a comparison of the percentage of students making two or more interactions per class session (talkers) and a comparison of the percentage of students making two or more interactions per class session by student race, gender and age. In the typical class meeting session, seven to eight students accepted the consolidation of responsibility and became talkers, accounting for 92 percent of all student interactions. We found no significant difference in the percentage of whites and non-whites who were talkers (19.7 to 18.4%). However, white talkers had a significantly higher mean number of interactions per class session than did non-white talkers (6.17 to 5.07). We also found that females were significantly more likely than males to be talkers (20.9 to 16.3%). However, male talkers had a slightly, but statistically significant, higher mean number of interactions per class session when compared to female

⁵ Significant at $P < .08$

talkers (6.14 to 5.93). When it comes to student age, non-traditional students were almost three times as likely as traditional students to be talkers (47.9 to 16.3%). Non-traditional talkers also had a significantly higher mean number of interactions per class session compared to traditional talkers (8.26 to 5.21).

As Table 5 demonstrates, further comparisons by race and gender revealed few significant differences. A higher percentage of white males compared to non-white males were talkers (17.3 to 10.9%) and white male talkers had a higher mean number of interactions per class session (6.36 to 4.29), however, the differences were not statistically significant. Interestingly, a slightly higher percentage of non-white females were talkers compared to white females (21.6 to 20.8%). However, white female talkers had a somewhat higher mean number of interactions per class session (6.06 to 5.24), but neither difference was statistically significant.

There were also no significant differences when comparing white traditional students with non-white traditional students by either percentage of students who were talkers or mean interactions per class session by talkers. A significantly higher percentage of white non-traditional students were talkers compared to non-white non-traditional students (53.5 to 34.9%). However, the difference in mean interactions per class session by white and non-white non-traditional students was not significant. Thus while statistically significant differences were few, the direction of the advantage most often favored white students over their non-white counterparts.

Table 6 presents a comparison of mean interactions by students making two or more interactions per class session and the percentage of students who are talkers by student race and instructor gender. A significantly higher percentage of students in courses with female instructors were talkers compared with students in courses with male instructors (36.5 to 15.2%). These talkers in female taught courses also had a higher mean number of interactions per class session (7.08 to 5.31). A significantly higher percentage of white students in male taught courses were talkers compared to non-white students in male taught courses (16.3 to 9.4%) and the white talkers spoke up more often during the class period (5.44 to 4.00). The pattern differed in female taught courses. A significantly higher percentage of non-white students were talkers (51.1 to 33.6%). However, the white talkers in female taught courses had a higher mean number of interactions per class session (7.46 to 5.79). The findings suggest that non-white students are more likely than whites to become talkers in courses taught by female instructors, but the pattern is reversed in courses taught by male instructors with white students more likely to become talkers. Given that the courses taught by females were both smaller and had a higher percentage of nontraditional students, and given the small size of the sample of courses, it is not possible to determine whether these differences are due to instructor gender or the size and composition of the classes.

B. Students Perceptions of Classroom Discussion

Table 7 presents students' self reports via survey of characteristics of talkers and non-talkers. As was the case in previous research (reported above), students' self reports of frequency of participation in class discussion exceeded what was observed. In their self reports, 75% of students reported contributing to discussion twice or more in the typical class meeting. Therefore, when reporting results from survey data, we chose to define talkers as those who reported making three or more contributions to discussion per session. The resulting percentage of students who were then defined as talkers (27.6%) was still higher than percentage of talkers observed (19.5%). Using survey data we were also able to make comparisons of talkers and non-

Table Five: Mean interactions by students making two or more interactions per class session (ANOVA Comparison of Means) and percent of students making two or more (Twoplus) interactions per class session (Kendall's tau) by student race, student gender, and student age

	No. Students Making Two Plus Interactions	% Students Making Two Plus Interactions	Mean Interactions by Two Plus Students	No. Interactions by Two Plus Students	% all Interactions by Two Plus Students	N
All	7.61	19.5	5.98	45.5	92.1	274
Whites (84.5%)	6.50	19.7	6.17***	39.9	92.5	234
Non-whites (15.5%)	1.11	18.4	5.07***	5.6	89.4	40
Males (24.1%)	1.83	16.3*	6.14***	11.3	91.6	66
Females (75.9%)	5.78	20.9*	5.93***	34.3	92.2	208
Traditional (74.8%)	5.69	16.3***	5.21***	29.7	89.7	205
Nontraditional (25.2%)	1.92	47.9***	8.26***	16.3	96.9	69
White Males (24.3%)	1.64	17.3	6.36	10.4	92.1	59
Non-white Males (4.6%)	.19	10.9	4.29	.8	85.7	7
White Females (60.2%)	4.86	20.8	6.06	29.4	92.6	175
Non-white Females (10.9%)	.92	21.6	5.24	4.8	90.1	33
White Traditional (77.3%)	5.00	16.6	5.43	27.1	90.5	180
Non-white Traditional (12.4%)	.69	14.4	3.64	2.5	82.0	25
White Non- traditional (7.2%)	1.50	53.5*	8.48	12.7	97.0	54
Non-white Nontraditional (3.1%)	.42	34.9*	7.47	3.1	96.6	15
N				1638		274

*** Significant at the $p < .001$ level

* Significant at the $p < .05$ level

Table 6: Mean interactions by students making two or more interactions per class session (ANOVA Comparison of Means) and percent of students making two or more (Twoplus) interactions per class session (Kendall's tau) by student race and instructor gender

	No. Students Making Two Plus Interactions	Percent Students Making Two Plus Interactions	Mean Interactions by Two Plus Students	No. Interactions by Two Plus Students	Percent all Interactions by Two Plus Students	N
All	7.61	19.5	5.98	45.5	92.1	274
Male	7.08	15.2***	5.31***	37.6	89.0	170
Instructor (79.7%)						
Female	8.67	36.5***	7.08***	61.3	96.1	104
Instructor (20.3%)						
White Students	6.42	16.3**	5.44***	34.9	90.2	154
Male Instructor (67.5%)						
Non-white	.67	9.4**	4.00***	2.7	76.2	16
Students Male Instructor (12.1%)						
White Students	6.67	33.6*	7.46***	49.8	95.8	80
Female Instructor (17.0%)						
Non-white	2.00	51.1*	5.79***	11.6	97.2	24
Students Female Instructor (3.4%)						
N				1638		274

*** Significant at the $p < .001$ level

** Significant at the $p < .01$ level

* Significant at the $p < .05$ level

talkers by their seating (front third versus back two thirds), class standing (freshmen and sophomores versus juniors and seniors), and by expected grades.

Table 8 presents a comparison of students' perceived responsibilities by race (whites versus non-whites) and level of participation (talkers versus non-talkers). Of the seven responsibilities at least 86 percent of all students agreed that six were part of their responsibility. There was a strong consensus that attending class, completing assigned tasks, studying for exams and quizzes, paying attention in class, learning the material and asking for help when needed were each a part of the students' responsibilities. However, when it came to responsibility for participation in class discussion, less than 71 percent agreed this was part of the student's responsibilities.

Using an ANOVA comparison of means, students who reported they were talkers had a significantly higher mean age than self reported non-talkers (24.7 to 21.0 years). This is consistent with our observations. Non-traditional students were more likely to be talkers than traditional students (see Table 5). Using Kentall's tau, we found no significant self reported differences in the percentage of students who were talkers between whites and non-whites, females and males, juniors and seniors versus freshmen and sophomores, nor by student grades. However, significantly more non-traditional students reported being talkers compared to traditional students (49.2 to 23.1%) and significantly more students in female taught courses reported being talkers when compared to students in male taught courses (34.9 to 24.3%). Finally, significantly more students seated in the front one third of the classroom reported being talkers than students in the back two thirds of the classroom (36.3 to 21.6%). These results are consistent with our observations, nontraditional students and students in female instructors' courses were more likely to be talkers. Differences by instructor gender, however once again, must be interpreted with caution because female instructors taught smaller courses with more nontraditional students compared to the courses taught by male instructors.

When we compared white and non-white students, we found no significant differences in students' perceived responsibilities except for responsibility to "learn the material." A significantly higher percentage of white students agreed this was a student responsibility than did non-white students (97.6 to 88.3%). Further examination revealed it was the non-talkers who differed in their responses on this responsibility. While white and non-white non-talkers had similar levels of agreement on five of the responsibilities, White non-talkers were significantly more likely than non-white non-talkers to agree students had a responsibility for learning the material (96.5 to 84.2%). Another difference was asking for help from the instructor when needed (85.3 to 71.1%). This difference would be significant at $p < .08$. A greater percentage of non-white talkers reported their agreement with responsibility for participation in classroom discussion (64.3 to 52.6%), but the difference was not statistically significant. These findings are difficult to interpret. Consistent with Ballard and Clanchy's (1991) argument, we hypothesize that they may be due to prior experience in the educational system. Non-white students' primary and secondary experience may have emphasized more rote and teacher-centered learning than that of white students. As such non-white students may have been socialized to take a more passive approach to learning, seeing the teacher as more responsible than the student for learning and ensuring that each student understood what was being taught. Non-whites may have also experienced a primary and secondary educational setting where teachers emphasized control and order in the classroom to a greater extent than they emphasized creativity and initiative in learning. Further research will be necessary to test this hypothesis.

White and non-white talkers agreed on each of the student responsibilities except participation in classroom discussion. Interestingly, 100 percent of the small number of self-reported non-white talkers (N=16), indicated their agreement with responsibility for participation compared to almost 91 percent of white talkers. While this difference was statistically significant, both groups had a very high level of agreement.

Table 9 presents a comparison of students' reasons for participation in discussion by level of participation (talker versus non-talker) and race (white versus non-white). We found no significant differences in responses of whites and non-whites. Again, perhaps because of the small number of non-white non-talkers (N=38) and non-white talkers (N=16), statistically significant results were difficult to demonstrate. Reasons for participation by white and non-white non-talkers were very similar. The top reasons cited for participation by non-talkers were

**Table 7: Survey characteristics of talkers and non-talkers
(Kendall's tau - except where indicated)**

Characteristic	Non-talkers (72.4%)	Talkers (27.6%)	N
Mean Age (Oneway ANOVA)	21.0	24.7***	347
Percentage of White Students (86.8%)	72.9	27.1	354
Percentage of Non-white Students (13.2%)	70.4	29.6	54
Percentage of Female Students (75.1%)	73.1	26.9	305
Percentage of Male Students (24.9%)	71.4	28.6	98
Percentage of Traditional Students (82.4%)	76.9	23.1***	286
Percentage of Non-traditional Students (17.6%)	50.8	49.2***	61
Percentage in Female taught courses (31.2%)	65.1	34.9*	129
Percentage in Male taught courses (68.8%)	75.7	24.3*	284
Percentage of Front Third Seating (41.5%)	63.7	36.3***	171
Percentage of Back Two-thirds Seating (58.5%)	72.5	21.6***	241
Percentage Junior/Senior (17.6%)	70.4	29.6	71
Percentage Frosh/Soph (82.4%)	72.6	27.4	332
Percentage Self-defined A student (25/4%)	66.7	33.3 ⁶	96
Percentage Self-defined B student (51.9%)	70.9	29.1	196
Percentage Self-defined C student (20.1%)	78.9	21.1	76
N	298	114	412

*** Significant at the $p < .001$ level

** Significant at .01

⁶ Grade differences significant at .065

Table 8: Students' perceived responsibilities by race and level of participation and race (Kendall's tau)

My responsibilities as a student include : (Circle all that apply)	All	White	Non-white	White Non-talker	Non-white Non-talker	White Talker	Non-white Talker
attend class	98.9	98.9	98.3	99.2	97.4	100	100
complete assigned tasks	98.6	98.8	96.7	98.8	94.7	100	100
study for exams/quizzes	97.3	97.6	95.0	96.9	92.1	100	100
pay attention in class	97.1	97.6	93.3	97.7	89.5	100	100
learn the material	96.4	97.6*	88.3*	96.5*	84.2*	100	93.8
ask for help from the instructor when I need it	86.5	87.8	80.0	85.3	71.1 ⁷	95.8	93.8
participate in class discussion	70.7	72.1	66.7	64.3	52.6	90.6**	100**
N	438	378	60	258	38	96	16

* significant at .05

** significant at .01

“I have something to share,” “I need clarification,” “participation may help my grade,” and “My instructor creates a comfortable atmosphere by sharing about him/herself.” The least frequently cited reasons for participation in discussion by non-talkers were “It is required,” “If I don’t, no one else will,” and “I disagree with something the instructor said.” Non-white non-talkers more frequently cited “It makes the class more interesting” as a reason for participation (31.6 to 24.8%), but the difference was not statistically significant

Among talkers, again there were no statistically significant differences in reasons cited for participation in classroom discussion. However, non-white talkers cited “I need clarification” more often than did white talkers (75.0 to 54.2%), a difference that would be significant at $p < .1$. Non-white talkers also more frequently stated “I learn more when I participate” than did white talkers (81.3 to 61.5%), a difference that would be significant at $p < .09$. But the larger picture is one of agreement between white and non-white talkers on their reasons for participation in discussion.

Table 11 presents reasons why students choose not to participate by their level of participation (talker versus non-talker) and race (white versus non-white). We again found no significant differences by race. Whites and non-whites were very similar in the degree to which they cited the four top reasons “I am shy,” “the feeling that I don’t know enough about the subject matter,” “I have nothing to contribute,” and “my ideas are not well enough formulated.” While the differences were not statistically significant, non-whites more frequently indicated they did not participate because “Of the chance I would appear unintelligent to other students” (28.3 to 21.2%), “of the chance I would appear unintelligent to the instructor” (25.0 to 18.5%), and “I have not completed the assigned tasks” (26.7 to 17.2%). The only significant difference between white non-talkers and non-white non-talkers or white talkers and non-white talkers was that among talkers whites were more likely to avoid participation because of the perception that the instructor does not want participation or discussion (7.3 to 0.0%).

⁷ Significant at $p < .08$

Table 10: Reasons for participation in discussion by level of participation and race (Kendall's tau)

In this class, I participate in discussion because: (Circle all that apply)	All	White	Non-white	White Non-talker	Non-white Non-talker	White Talker	Non-white Talker
I have something to share	52.5	51.2	58.3	44.0	44.7	75.0	87.5
I need clarification	46.0	45.0	53.3	42.6	47.4	54.2	75.0 ⁸
participation may help my grade	40.6	41.3	36.7	34.1	28.9	63.5	56.3
My instructor creates a comfortable atmosphere by sharing about him/herself	38.4	37.8	43.3	31.0	34.2	62.5	68.8
I learn more when I participate	37.2	35.7	45.0	25.6	28.9	61.5	81.3 ⁹
It makes the class more interesting	34.8	34.4	35.0	24.8	31.6	62.5	43.8
I disagree with something another student said	25.1	25.1	23.3	19.4	18.4	42.7	37.5
I am familiar and comfortable with my classmates	23.3	23.8	20.0	19.8	13.2	36.5	37.5
the instructor calls on me	21.9	22.5	18.3	24.4	18.4	20.8	25.0
I don't participate in discussion	18.3			24.4	23.7	2.1	6.3
I disagree with something the instructor said	15.8	15.3	16.7	12.4	7.9	25.0	37.5
I am trying to help other students	12.6	12.7	11.7	9.3	7.9	25.0	25.0
if I don't, no one else will	12.0	12.7	8.5	12.0	8.1	17.7	12.5
It is required	10.2	10.6	8.3	10.9	10.5	11.5	6.3
N	408	378	60	258	38	96	16

⁸ Significant at P < .10

⁹ Significant at P < .09

Table 11. Reasons why students choose not to participate by level of participation and race (Kendall's tau)

In this class, when I choose NOT to participate in discussion I do so because: (Circle all that apply)	All	Whites	Non-whites	White Non-talker	Non-white Non-talker	White Talker	Non-white Talker
I am shy	42.0	43.4	35.0	50.8	47.4	24.0	12.5
of the feeling that I don't know enough about the subject matter	33.0	34.7	25.0	35.7	23.7	33.3	18.8
I have nothing to contribute	29.6	30.2	28.3	30.4	26.3	33.3	31.3
my ideas are not well enough formulated	22.9	22.8	25.0	22.9	21.1	22.1	25.0
someone else will participate therefore I don't need to.	22.8	23.3	20.0	28.3	18.4	13.5	31.3
of the chance I would appear unintelligent to other students	21.9	21.2	28.3	26.0	26.3	12.5	25.0
of the chance I would appear unintelligent to the instructor	19.2	18.5	25.0	22.9	26.3	7.3	12.5
I have not completed the assigned tasks (I am not prepared for class)	18.5	17.2	26.7	16.3	23.7	19.8	31.3
the class is too large	14.7	14.3	18.3	15.9	21.1	7.3	18.8
the course is not interesting to me	7.7	8.0	6.7	9.7	5.3	4.2	0.0
the instructor does not want participation or discussion	4.5	4.5	5.0	3.5	5.3	7.3*	0.0*
of the possibility class may end early if no one participates	3.8	4.0	1.7	4.7	2.6	3.2	0.0
N	408	378	60	258	38	96	16

IV. Conclusion

While Antonio, et al's (2004) work has demonstrated the benefits of multi-racial group discussion for white students, our research raises concerns about the participation of non-white students. The conclusions of this preliminary investigation, of course, are limited because it was conducted at a single university with non-white enrollment of approximately 15 percent and because the sample included only introductory sociology courses. Clearly further research at a variety of institutions with a range of non-white enrollments and including a variety of disciplines is needed. While the results of this case study are mixed with regard to the impact of race on participation in classroom discussion, there is evidence that presents cause for concern. Based on our regression analysis, white students are likely to participate at a significantly higher rate than non-white students. While there are occasions when the non-white students become the dominant participants in discussion (e.g., when discussing topics related to race), we also found evidence that white students may choose to disengage from these very discussions. Likewise, we found some evidence that an increase in the percentage of non-white students may decrease overall participation. These preliminary findings require further investigation of the type described above.

A major area for further examination is the impact of race on the participation of various minority groups. For example, we need to ask, do the interaction patterns of Asians, for example, differ significantly from those of African Americans or Hispanics? Do white students tend to withdraw from discussion only when large numbers of particular minority groups are enrolled in the course? Or are they likely to be silent regardless of which minority group is represented? We also need to further investigate the topics which spark the participation of non-white students in class and determine how to encourage their interaction without closing the door to discussion and debate among students. Does the percentage of minority students matter in this regard? Are the classroom interaction dynamics different on a campus with 50 percent minority enrollment versus 15 percent minority enrollment?

Our study also failed to find a difference in the reasons why whites and non-whites chose to participate or not participate. Survey studies will need to directly address the attitudes and behaviors of whites and non-whites with regard to one another as well as the usual reasons given for participation and non-participation. Finally, we need to address the role of instructor gender. Studies that include a larger number of courses with a larger number of instructors are necessary before any firm conclusions can be drawn with regard to the relationship between instructor gender and race.

Given the increasing attention that is being paid to race in higher education by academics and non-academics, continued study of the actual experiences of minority students within higher education is clearly warranted. As Dedlacek (1983) suggested, different teaching methods may be necessary to facilitate the success of minority students. Thus in order to be able to see the world from the viewpoint of minority students, as Wu and Morimoto (1983) argue is necessary, investigations at a wide range of campuses with a wide range of minority students will be necessary to capture the experiences of minority students in American higher education.

References

Adams, Maurianne (1992). "Cultural Inclusion in the American College Classroom." *New Directions for Teaching and Learning*, Vol. 49, pp. 5-18.

Aitken, Joan E., & Neer, Michael R. (1993). "College Student Question-Asking: The Relationship of Classroom Communication Apprehension and Motivation." *Southern Communication Journal*, Vol. 59, pp. 73-81.

Antonio, Antonio, Chang, Mitchell J., Hakuta, Kenji, Kenny, David A., Levin, Shana, & Milem, Jeffrey F. (2004). "Effects of Racial Diversity on Complex Thinking in College Students." *Psychological Science*, Vol. 15, No. 8, pp. 507-510.

Astin, Alexander W. (1985). "*Achieving Educational Excellence*." San Francisco: Jossey-Bass.

Auster, Carol J. & MacRone, Mindy (1994). "The Classroom as a Negotiated Social Setting: An Empirical Study of the Effects of Faculty Members' Behavior on Students' Participation." *Teaching Sociology*, Vol. 22, pp. 289-300.

Ballard, Brigid & Clanchy, John (1991). "*Teaching Students from Overseas*." Cheshire, Melbourne: Longman.

Boersma, P. D., Gay, D., Jones, R.A., Morrison, L., & Remick, H. (1981). "Sex Differences in College Student-Teacher Interactions: Fact or Fantasy?" *Sex Roles*, Vol. 7, pp. 775-84.

Brooks, V. (1982). "Sex Differences in Student Dominance Behavior in Female and Male Professors' Classrooms." *Sex Roles*, Vol. 8, pp. 683-90.

Cabrera, Alberto F., Crissman, Jennifer L., Bernal, Elena M., Nora, Amaury, Terenzini, Patrick T., & Pascarella, Ernest T. (2002). "Collaborative Learning: Its Impact on College Students' Development and Diversity." *Journal of College Student Development*, Vol. 43, No. 1, pp. 20-34.

Cabrera, Alberto F., Nora, Amaury, Terenzini, Patrick T., Pascarella, Ernest T., & Hagedorn, L. (1999). "Campus Racial Climate and the Adjustment of Students to College: A Comparison Between White Students and African-American Students." *Journal of Higher Education*, Vol. 70, No. 2, pp. 134-60.

Canada, Katherine & Pringle, Richard (1995). "The Role of Gender in College Classroom Interactions: A Social Context Approach." *Sociology of Education*, Vol. 68, pp.161-186.

Constantinople, Ann, Cornelius, Randolph, & Gray, Janet M. (1988). "The Chilly Climate: Fact or Artifact?" *The Journal of Higher Education*, Vol. 59, pp. 527-50.

Cornelius, Randolph, Gray, Janet M. & Constantinople, Ann (1990). "Student Faculty Interaction in the College Classroom." *Journal of Research and Development in Education*, Vol. 23, pp. 189-97.

Crawford, Mary, & MacLeod, Margo (1990). "Gender in the College Classroom: An Assessment of the "Chilly Climate" for Women." *Sex Roles*, Vo. 23, pp. 101-22.

Howard, J., Zoeller, A., and Pratt, Y.

Crombie, Gail, Pyke, Sandra W., Silverthorn, Naida, Jones, Alison, & Piccinin, Sergio (2003). "Students' Perceptions of Their Classroom Participation and Instructor as Function of Gender and Context." *The Journal of Higher Education*, Vol. 74, pp. 51-76.

Dedlacek, William E. (1983). "Teaching Minority Students." *New Directions for Teaching and Learning*, Vol. 16, pp.39-50.

Fassinger, Polly A. (1995). "Understanding Classroom Interaction: Students' and Professors' Contributions to Students' Silence." *The Journal of Higher Education*, Vol. 66, pp. 82-96.

Faust, Debra F., & Courtenay, Bradley C. (2002). "Interaction in the Intergenerational Freshman Class: What Matters?" *Educational Gerontology*, Vol. 28, pp. 401-422.

Feagin, Joe R., Hernan, Vera, and Imani, Nikitah. (1996). "*The Agony of Education: Black Students at White Colleges and Universities.*" New York: Routledge.

Feagin, Joe R. (2003). "Race and Its Continuing Significance on Our Campuses: An Interview with Dr. Joe R. Feagin." *Black Issues in Higher Education*, Vol. 19, No. 24, pp. 24-27.

Fritschner, Linda M. (2000). "Inside the Undergraduate College Classroom: Faculty and Students Differ on the Meaning of Student Participation." *The Journal of Higher Education*, Vol. 71, pp. 342-62.

Garside, Colleen (1996). "Look Who's Talking: A Comparison of Lecture and Group Discussion Teaching Strategies in Developing Critical Thinking Skills." *Communication Education*, Vol. 45, pp. 212-27.

Hall, Roberta M. & Sandler, Bernice R. (1982). "The Classroom Climate: A Chilly One for Women?" *Project on the Status and Education of Women*. Washington, D.C.: Association of American Colleges.

Hardiman, Rita & Jackson, Bailey W. (1992). "Racial Identity Development: Understanding Racial Dynamics in College Classrooms and on Campus." *New Directions for Teaching and Learning*, Vol. 52, pp.21-38.

Heller, Jack F., Puff, C. Richard, & Mills, Carol J. (1985). "Assessment of the Chilly College Climate for Women." *Journal of Higher Education*, Vol. 56, pp. 446-461.

Howard, Jay R., & Baird, Roberta (2000). "The Consolidation of Responsibility and Students' Definitions of the College Classroom." *The Journal of Higher Education*, Vol. 71, pp. 700-721.

Howard, Jay R., & Henney, Amanda L. (1998). "Student Participation and Instructor Gender in the Mixed Age College Classroom." *The Journal of Higher Education*, Vol. 69, pp. 384-405.

Howard, Jay R., Short, Lillard B. & Clark, Susan M. (1996). "Student Participation in the Mixed-Age College Classroom." *Teaching Sociology*, Vol. 24, pp. 8-24.

Howard, Jay R., James, George, & Taylor, David R. (2002). "The Consolidation of Responsibility in the Mixed-Age College Classroom." *Teaching Sociology*, Vol. 30, pp. 214-234.

Johnson, David W., Johnson, Roger T., & Smith, Karl A. (1991). "**Cooperative Learning: Increasing College Faculty Instructional Productivity.**" ASHE_ERIC Higher Education Report No. 4. Washington, D.C.: George Washington University.

Jung, Jan, Moore, Rosemary L., & Parker, Jim (1999). "A Study of Older Students' Participation in the College Classroom." Unpublished.

Karp, David A., & Yoels, William C. (1976). "The College Classroom: Some Observation on the Meaning of Student Participation." *Sociology and Social Research*, Vol. 60, pp. 421-39.

Kember, David, & Gow, Lyn (1994). "Orientations to Teaching and Their Effect on the Quality of Student Learning." *Journal of Higher Education*, Vol. 65, pp. 58-74.

McKeachie, Wilbert J. (1990). "Research on College Teaching: The Historical Background." *Journal of Educational Psychology*, Vol. 82, pp. 189-200.

Neer, Michael R., & Kircher, W. Faye (1989). "Apprehensives' Perceptions of Classroom Factors Influencing Their Class Participation." *Communication Research Reports*, Vol. 6, pp. 70-77.

Nunn, Claudia E. (1996). "Discussion in the College Classroom: Triangulating Observational and Survey Results." *The Journal of Higher Education*, Vol. 67, pp. 243-66.

O'Keefe, Tim F., & Faupel, Charles E. (1987). "The Other Face of the Classroom: Student Ethnography." *Sociological Spectrum*, Vol. 7, pp. 141-155.

Pascarella, Ernest T., Wolniak, Gregory C., & Pierson, Christopher T. (2003). "Influences on Community College Students' Educational Plans." *Research in Higher Education*, Vol. 44, No. 3, pp. 301-314.

Pearson, Judy, & West, Richard (1991). "An Initial Investigation of the Effects of Gender on Student Questions in the Classroom: Developing a Descriptive Base." *Communication Education*, Vol. 40, pp. 22-32.

Schwitzer, Alan M., Ancis, Julie R., & Griffin, Oris T. (1999). "Validating a Proposed Model of African-American Students' Social Adjustment." *Journal of the First-Year Experience and Students in Transition*, Vol. 11, No. 1, pp. 77-102.

Smith, Daryl G. (1977). "College Classroom Interactions and Critical Thinking." *Journal of Educational Psychology*, Vol. 69, pp.180-90.

Statham, A., Richardson, L., & Cook, J.A. (1991). "**Gender and University Teaching: A Negotiated Difference.**" Albany: SUNY.

Saufley, Ronald W., Cowan, Katherine O. & Blake, J. Herman (1983). "The Struggles of Minority Students at Predominately White Institutions," *New Directions for Teaching and Learning*, Vol. 16, pp. 3-15.

Sternglanz, Sarah Hall, & Lyberger-Ficek, Shirley. (1977). "Sex Differences in Student-Teacher Interactions in the College Classroom." *Sex Roles*, Vol. 3, pp. 345-52.

Terenzini, Patrick T., Cabrera, Alberto F., Colbeck, Carol L., Bjorklund, Stefani A., & Parente, John M. (2001). "Racial and Ethnic Diversity in the Classroom: Does It Promote Student Learning?" *Journal of Higher Education*, Vol. 72, No. 5, pp. 509-531.

Terenzini, Patrick T., Yaeger, Patricia M., Bohr, Louise, Pascarella, Ernest T., & Nora, Amaury (1997). "African American College Students' Experiences in HBCUs and PWIs and Learning Outcomes." Paper presented at the Annual Meeting of the Association for Institutional Research (Orlando, FL, May, 1997).

Tinto, Vincent (1975). "Dropout from Higher Education: A Theoretical Synthesis of Recent Research." *Review of Educational Research*, Vol. 45, pp. 89-125.

Tinto, Vincent (1997). "Classrooms as Communities: Exploring the Educational Character of Student Persistence." *The Journal of Higher Education*, Vol. 68, pp. 599-623.

Weast, Don (1996). "Alternative Strategies: The Case for Critical Thinking." *Teaching Sociology*, Vol. 24, pp. 189-194.

Weinstein, Gerald & Obear, Kathy (1992). "Bias Issues in the Classroom: Encounters with the Teaching Self." *New Directions in Teaching and Learning*, Vol. 52, pp. 39-50.

Wu, Jean & Morimoto, Kiyoo (1983). "On Careful Listening." *New Directions for Teaching and Learning*, Vol. 16, pp. 51-57.

“Copyright 2006-2015 by The Trustees of Indiana University. Reproduced with permission from the Journal of the Scholarship of Teaching and Learning (JoSoTL).”