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Encouraging Feedback In The Large College Class: The Use Of A Question/Comment Box

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LARGE courses have become a fact of academic life in colleges and universities of today. The economic benefits that accrue to these institutions from large courses are tremendous. Unfortunately, students and instructors do not reap benefits of the same magnitude when engaging in large courses. In fact, these classes tend to decrease student involvement and individual attention to students from professors, and increase inhibition of student to instructor communication both within and outside of the classroom. These factors often lead to lower student perceptions of instructor and course quality and decreased learning. Freshmen and sophomore, or lower-division students and women are most adversely affected by these negative factors and outcomes in large classes.

Because it is unlikely that large courses will disappear, it is critical to find communication strategies that enhance student participation and involvement in these courses. One such strategy, the use of a question/comment box in a large course, is the focus of the research reported here. Specifically, the categories into which questions and comments were coded are reported, and examples of actual messages received are included. In addition, the results of a questionnaire that assessed student perceptions of involvement, instructor quality, course quality, and learning as a result of the question/comment box are reported for male and female lower-division and upper-division students.

THE BENEFITS AND DRAWBACKS OF LARGE COURSES

Large courses are a source of economic benefits for colleges and universities. In these times of inadequate funding and large college enrollments, large classes are one way that undergraduates can graduate in a timely manner (Jahrig, 1993) because more students can be taught without spending more resources (Gibbs, 1992). These classes are cost effective and efficient (Kozma, Belle, & Williams, 1978), and as Gleason (1986) notes, "...large courses are not likely to fall from favor. Their pragmatic economics speak an eloquent defense which will probably produce more courses with even bigger enrollments" (p. 20). The benefits of these large courses, however, accrue to the college and university as a whole. Students and their instructors fare less well in large classes.

Three main problems have been associated with large classes. First, students report increased feelings of estrangement, anonymity, impersonality, and a lack of involvement (Gleason, 1986; Pardy & Mortensen, 1984; Penner, 1984). Students report that in large classes they feel as if they are simply occupying space in a large room, and that no one really knows them as an individual or cares about them (Pardy & Mortensen, 1984). Erikson and Strommer (1991) report that anonymity is the primary problem in large classes because it diminishes motivation, commitment, and personal responsibility of the students. The fact that students in large classes are passive and feel a lack of involvement should come as no surprise as they are by-and-large the recipients of one-way communication that is none too personal.

The second problem associated with large classes is that students feel the lack of individual attention keenly (Pardy & Mortensen, 1984). Often, instructors do not know the names of their students in large classes. When class size reaches 200 or more students, this is virtually impossible. Gleason (1986) notes that even if an instructor could learn 200 or more names of students, there is simply not enough class time in which to use them. This makes students feel as though they are simply numbers on a computer printout (Ward & Jenkins, 1992). Not only are individual students usually not known or called by name, but the feedback they receive on their course work is often impersonal and not received in a timely fashion. Because of the logistics involved in teaching such a large number of students, the first feedback they receive on their work in the course is often a computer printout of their grade on the first exam (Gibbs & Jenkins, 1992). The lack of individual attention results in students feeling like nameless persons known as their student identification numbers by a computer that grades their course work.

The third problem associated with large classes is the inhibition of student to instructor communication. As class size increases, students become more inhibited and are less likely to participate in class (Gibbs, 1992; Gleason, 1986; Pardy & Mortensen, 1984). Students find it difficult to answer questions, make comments, or ask questions (Gibbs, 1992) because they fear appearing foolish in front of large numbers of their peers (Gleason, 1986). "In a large group a smaller proportion of people can participate given time constraints, and the larger the group, the less likely an individual feels free to volunteer" (Pardy and Mortensen, 1984, p. 188). These difficulties then lead to the sense that the lecture is simply one-way communication from the instructor to the students (Penner, 1984), and students have little control over the nature, rate, and flow of information (Kozma, et al., 1978). Because students feel inhibited from interacting with instructors in the classroom, it is also likely that they will be less likely to attend office hours or to communicate with instructors in other settings outside of the classroom.

These negative factors of increased anonymity, lack of individual attention to students from professors, and lack of student to instructor communication often lead to negative outcomes in regard to student perceptions of the instructor and the course and student learning. Students who experience the negative factors associated with large classes tend to

have lower perceptions of instructor and course quality (Gibbs & Jenkins, 1992). Students tend to learn and retain less in large classes (Koballa, et al., 1978), and the distribution of student grades is altered in large classes such that A and B+ grades decline, while B and C grades increase (Gibbs & Jenkins, 1992).

THE EFFECTS OF CLASS LEVEL AND SEX

The negative factors and outcomes associated with large classes affect the student body differentially. Introductory courses taken by lower-division students are typically offered in the large format (Jahrig, 1993; Holme, 1992). Large introductory classes, with their low cost per student, "buy" smaller, more specialized, classes for upper-division and graduate students (Erikson & Strommer, 1991; Huddelson, 1956). However, large courses can be particularly confusing and challenging experiences for lower-division students and women.

Lower-division students are experiencing a difficult transition from high school to college. As Erickson and Strommer explain in their book *Teaching College Freshmen* (1991), new college students have anticipated that college will be the place where they can pursue their own interests and they tend to be disappointed when they walk into their first large course to find that they are one of 100, 200, or even more students. They find it hard to learn note-taking strategies, they feel particularly alienated, and they are afraid to speak out in class. In addition, they are experiencing their first freedom from their families, they are trying to fit into a new social system, and they are probably having trouble managing their time. These students are more likely to experience negative reactions to the increased anonymity and lack of individual attention, and they are more likely to feel inhibited from engaging in student to instructor communication.

These negative feelings are likely to be magnified for female students. Although there has been a trend to equalize educational experiences for female and male students in recent years, evidence still exists that the classroom climate is a "chilly" one for female college students (Hall & Sandler, 1982). Doyle (1985) notes that one of the main features of the educational system is that it preserves society's view of what is expected of women and men. Subtle messages that start as early as preschool, "convince many girls that they should be quiet, good, and not too noticeable" (Bate, 1988, p. 144). By the time that students reach college, classrooms tend to be male-dominated in that males dominate classroom discussions (Arliss & Borisoff, 1993; Basow, 1986; Stewart, Stewart, Friedley, & Cooper, 1990). Thus, female students tend to be more passive, to engage in less student to instructor communication, and to have lower self-concepts than male students (Rich, 1992; Stewart, et al., 1990). These problems exist in college classes of all sizes and at all levels, but large classes at the lower-division level may be especially problematic for female students in that they magnify passivity and inhibition of student to instructor communication.

In review, large classes tend to be problematic in that they promote lack of involvement in students, lack of individual attention from instructors to students, and inhibition of student to instructor communication. These problems lead to lower students perceptions of instructor and course quality and decreased learning. These negative outcomes are more likely to affect lower-division students and women. Effective teaching strategies that address these problems are critical in order to improve the educational experience for students, especially lower-division and female students, who are enrolled in large college courses.

STRATEGIES TO ENCOURAGE FEEDBACK IN LARGE CLASSES

One way to improve the learning environment in large classes is to encourage feedback from students. Given the constraint that students often do not feel comfortable speaking in class, this feedback should be encouraged through channels in which students can remain

anonymous. Two innovative ways to encourage anonymous student feedback in large classes have been reported. Pardy and Mortensen (1984) report on the use of a telephone hot line attached to a telephone answering device that was installed in the instructor's office. This line was used exclusively for students enrolled in the instructor's large (over 300 students) introductory course in human physiology. Students were encouraged to use the "human physiology hot line" to ask questions or make comments about any course-related issue. Each class period would begin with responses to questions received over the hot line, and students would receive a return call if they left their name and number. One hundred forty-three calls were received during the semester, and 64% were anonymous. These calls were coded into categories that included lecture material (31.5%), logistics (21%), exams (20%), workbook (14%) and laboratory assignments (7.7%), and miscellaneous comments (5.6%). At the end of the semester, 237 students made comments about the hot line on the course evaluation form. The comments were then coded into categories: questions answered in class were helpful to many students (19%), the hot line made it possible for students who are apprehensive about speaking in class to ask questions (12%), the hot line made the instructor more available (11%), and the hot line made it possible for students to express feelings and opinions anonymously (7%).

In a similar vein, Strauss and Fulwiler (1987) report on the use of an exit box in a large (over 300 students) Chemistry course. Students were encouraged to write thoughts, questions, concerns, critiques, and commentary on slips of paper, and to leave them in the exit box on their way out of the lecture hall. They then selected certain comments, put them on overhead transparencies, and put them up at the beginning of the next class. These questions or comments were then answered thus creating a feedback loop where none existed before. While they do not report the total number or percentage of comments in each category, the authors do list the categories into which these comments were coded. These categories include: the freewriters who comment on their concerns about everything except course content; the cautious who want to know what is expected of them; the confused who request clarification of a particular general content area; the curious who relate course content to their own lives; the searchers who request specific information about course content; the interpreters who request validation of a particular interpretation; and the discoverers who answer their own questions and thus learn directly from the experience of writing their questions. Neither of these studies reports coding reliabilities, nor do they take into account the differential effects that these feedback loops have on students of different class standing or sex.

The goal of the research reported here was to extend the findings of these researchers in their attempts to provide students in large classes with an anonymous feedback loop where none existed before. Specifically, this study involves the use of a question/comment box in a large course on Interpersonal Communication that enrolled 250 students. Given that the two previously reported attempts to encourage student feedback occurred in science classes, we wanted to determine the categories of student questions and comments in a communication course. To that end, we pose the following research question:

RQ1: What categories of questions and comments will emerge when a question/comment box is used in a large interpersonal communication course?

Categories of student comments and questions and coding reliabilities are reported in order to answer this research question. Examples of questions and comments that represent these categories are provided as well in the Results section.

Based on previous discussion, we also expected that student perceptions of course outcomes based on the use of the question/comment box would differ as a result of class

standing and student sex. Therefore, we offer the following hypotheses:

H1: Student perceptions of involvement, instructor quality, course quality, and learning will be higher for lower-division students than for upper-division students.

H2: Student perceptions of involvement, instructor quality, course quality, and learning will be higher for female students than for male students.

The results of a questionnaire that assessed student perceptions of involvement, instructor quality, course quality, and learning as a result of the use of the question/comment box by class standing and student sex are reported to test these hypotheses.

METHODS

General Procedures

A red question/comment box was constructed for use in a large 250 student introductory course in Interpersonal Communication at a large Mid-Western University. This box had a question mark carved in its lid through which students could place their questions and comments. The box was placed near the exit door so that students could easily and anonymously deposit their questions and comments as they left class. On the first day of class, students were encouraged to make use of the question/comment box. At the end of each class, the instructor and graduate teaching assistant would collect the questions and comments. They would then decide which questions and comments to respond to at the beginning of the next class. These questions and comments would then be copied on an overhead transparency. At the beginning of each class period, the student questions and comments would be shown on an overhead projector and responses would be given. Near the end of the semester, a questionnaire was constructed to assess student perceptions of involvement, instructor quality, course quality, and learning as a result of the use of the question/comment box. Students were asked to indicate their class standing and sex on the questionnaire. At the end of the semester, a coding scheme was developed for the questions and comments, and two coders placed all student questions and comments into the categories of the coding scheme.

Categories of Questions and Comments

The total number of questions and comments received during the semester was 61, or about 2 per class period. The coding scheme used to categorize these comments and questions had ten categories: positive personal feedback to instructor and teaching assistants (there were one graduate and four undergraduate teaching assistants), negative personal feedback to instructor and teaching assistants, positive feedback on class content, negative feedback on class content, feedback about the environment, personal comments and disclosures by students, personal problems of students, comments on how course content related to students' lives, questions about course content, and requests for validation about students' interpretations of course content. Two coders coded all responses. Percentage of agreement was 87% and Cohen's Kappa was .83. The two coders then discussed and resolved any coding discrepancies. The percentage of questions and comments by category and samples of comments and questions are presented in the Results section.

Questionnaire

A questionnaire was constructed to determine student perceptions of involvement, instructor quality, course quality, and learning as a result of the question/comment box. The students were asked to report their sex and class standing and to reply to a series of questions

about student perceptions on five-point Likert-type scales where 1=Strongly Agree and 5=Strongly Disagree. Four questions each were written to assess students' perceptions of involvement, instructor quality in terms of openness to feedback from students, course quality, and learning.

The results of the questionnaire indicated that the sample consisted of 68 males and 132 females, 86 of whom were lower-division students and 114 of whom were upper-division students. The results of the sixteen questions were analyzed by means of an exploratory factor analysis. The results indicated that three questions each loaded on the involvement and instructor quality factors, and four questions each loaded on the course quality and learning factors. The alpha reliabilities for these factors were .80, .70, .82, and .86 for involvement, instructor quality, course quality, and learning, respectively. The means and standard deviations for these outcome factors by class standing and sex of student are presented in Table 1.

TABLE 1

Mean Scores on Outcome Variables by Class Standing and Sex

	<u>Lower-Division</u>			<u>Upper-Division</u>			<u>Row Mean</u>
	Mean	S.D.	N	Mean	S.D.	N	
<u>Involvement</u>							
Male	2.54	.65	24	2.76	.78	42	2.68
Female	2.19	.71	60	2.52	.78	71	2.37
Column Mean	2.29			2.61			
<u>Instructor Quality</u>							
Male	1.45	.60	26	1.49	.45	42	1.48
Female	1.20	.37	60	1.32	.50	72	1.27
Column Mean	1.28			1.38			
<u>Course Quality</u>							
Male	2.06	.61	26	2.35	.67	42	2.24
Female	1.94	.55	60	2.11	.78	72	2.03
Column Mean	1.98			2.20			
<u>Learning</u>							
Male	2.97	.65	25	3.26	.64	42	3.15
Female	2.81	.71	60	3.01	.90	71	2.92
Column Mean	2.86			3.10			
<u>Times Used</u>							
Male	.46	.90	26	.12	.40	42	.25
Female	.12	.37	60	.24	.60	72	.18
Column Mean	.22			.19			

Independent Variables

The independent variables in this study were sex and class standing of the student respondents.

Dependent Variables

The dependent variables in this study were student perceptions of involvement, instructor quality in terms of encouraging feedback from students, course quality, and learning.

RESULTS

Research Question 1

Research question 1 was posed in order to determine the categories of questions and comments that would emerge when a question/comment box was used in a large interpersonal communication course. Ten categories of questions and comments emerged. For each category the percentage of total questions and comments per category will be given, and one or two representative samples of each will be offered below.

1. Positive personal feedback to instructor and TAs (31%): "Thank you very much for answering my questions regarding the undergraduate teaching assistants, especially considering my rather crass approach in phrasing those questions." "I thought I would drop you a note to tell you that I am enjoying this class very much."
2. Negative personal feedback to instructor and TAs (7%): "Why do we need 5 TAs? For the most part, all they do is sit and babble about nothing." "Boring, boring, boring."
3. Positive feedback on class content (15%): "The things I have learned in this class have already made me a much more successful communicator, and no matter how tired or stressed out I am, I can not afford to miss this class."
4. Negative feedback on class content (5%): "The tapes were hard to understand." "I wonder if classes are run this way at U of M. I doubt it."
5. Comments on the environment (8%): "This lecture hall is not large enough to seat all the students in the course. Because of work I frequently arrive late. I pay a lot to take this course; hence, I am a little pissed that I have to sit on the floor."
6. Personal comments and disclosures (13%): "Body piercing is the same as getting braces, coloring your hair, or wearing certain symbols or jewelry."
7. Personal problems (3%): "I am missing a lot of notes, and I did not do well on the quiz." "I was extremely ill last Thursday. Though I tried my hardest to make it to class, it was impossible."
8. Comments about how course content relates to students' lives (8%): "Do you ever regret knowing so much about communication? I wish

I wouldn't try to analyze stuff so much." "An example of arbitrary meaning: Why do we call a roach clip a roach clip? Because pot holder was already taken."

9. Questions about course content (5%): "Is writing nonverbal?"
- 10 Requests for validation about student interpretations of course content (5%): "When I said I got a 3.5 on the exam and my roommate said she got a 4.0 on the same exam, is this an example of a one-up?" "If we assume that communication is unique to humans, do we also have to assume that there is no superior life form?"

Hypotheses 1 and 2

In order to determine if student perceptions of involvement, instructor quality, course quality, and learning were higher for lower-division and female students, four 2 (class standing) X 2 (sex of student) ANOVAS were performed on these dependent variables.

The ANOVA on perceptions of involvement revealed a significant main effect for class standing ($F(1,196) = 7.60, p < .01$) such that lower-division students reported feeling more involved as a result of the use of the question/comment box ($M = 2.29$) than did upper-division students ($M = 2.61$). There was also a significant main effect for sex ($F(1,196) = 6.39, p < .02$) indicating that female students felt more involvement ($M = 2.37$) than did male students ($M = 2.68$). No significant interaction effect was detected.

The results of the ANOVA on perceptions of instructor quality in terms of being open to feedback from students revealed a significant main effect for sex of student ($F(1,199) = 8.33, p < .005$). Females rated instructor quality more highly ($M = 1.27$) than did males ($M = 1.48$) as a result of the use of the question/comment box. While no significant interaction effect was found and the main effect for class standing was not significant, the means were in the predicted direction in that lower-division students rated instructor quality more highly ($M = 1.28$) than did upper-division students ($M = 1.38$).

The ANOVA on perceptions of course quality as a result of the use of the question/comment box revealed a significant main effect for class standing ($F(1,199) = 4.64, p < .05$). Lower-division students were likely to rate course quality more highly ($M = 1.98$) than were upper-division students ($M = 2.20$). No interaction effect was found, and the main effect for sex approached, but did not reach, significance ($F(1,199) = 3.46, p < .065$). Female students were more likely to rate course quality highly ($M = 2.03$) than were male students ($M = 2.23$) as a result of the use of the question/comment box.

The results of the ANOVA on learning as a result of using the question/comment box revealed a significant main effect for class standing ($F(1,197) = 4.20, p < .05$) in that lower-division students rated learning more highly ($M = 2.86$) than did upper-division students ($M = 3.10$). No significant interaction effect was detected, and the main effect for sex approached, but did not reach, significance for sex of student ($F(1,197) = 3.30, p < .075$) as female students rated learning more highly ($M = 2.92$) than did male students ($M = 3.15$) as a result of the use of the question comment box.

These results indicate that support was found for both hypotheses. In terms of the first hypothesis, lower-division students did rate their perceptions of involvement, course quality, and learning significantly more highly than did upper-division students. While the results of the test on instructor quality were not significant, the means were in the predicted direction.

Regarding the second hypothesis, female students did rate perceptions of involvement and instructor quality significantly more highly than did male students, and their higher perceptions of course quality and learning approached, but did not reach, significance.

In order to determine if one group rated all dependent variables more highly than another

group, Scheffe's follow-up procedure was employed with p set at $<.05$. The results of these tests indicated that female lower-division students rated involvement, instructor quality, course quality, and learning significantly more highly than did male upper-division students. Another post hoc test was performed to determine if there were significant differences in the number of times students of different class standing and sex reported that they used the question/comment box. The results of an ANOVA on number of times used revealed a significant interaction effect ($F(1,199)=7.51, p<.01$) but no main effects. Male lower-division ($M = .46$) and female upper-division ($M = .24$) students reported that they used the question/comment box significantly more often than did male upper-division ($M = .12$) and female lower-division students ($M = .12$).

DISCUSSION

While the benefits of large classes have been shown to accrue to institutions of higher learning, three main problems have been shown to affect students in these large classes. Students feel lack of involvement, lack of individual attention, and student to instructor communication is inhibited in large classes. These negative factors can lead to lower student perceptions of instructor and course quality, and decreased learning. Lower-division and female students are most adversely affected by these negative factors and outcomes in large classes. This paper reports on the semester-long attempt to reverse these negative factors and outcomes through the use of a question/comment box in order to create a feedback loop from student to instructor.

The use of the question/comment box itself was designed to address specifically the problem of inhibition of student to instructor communication. Research Question 1 was posed to determine the categories of questions and comments that were sent from the students to the instructor. The responses by the instructor to these questions and comments in class were designed to enhance student involvement and to create the sense that the instructor and TAs were open to student feedback. This feedback loop, then, should enhance student perceptions of course quality and learning. It was hypothesized that lower-division and female student perceptions of involvement, instructor and course quality, and learning as a result of the use of the question/comment box would be higher than for upper-division and male students because previous literature suggests that they are most adversely affected by large classes.

Categories of Questions and Comments

A comparison of the relative frequency of questions and categories found by Pardy and Mortensen (1984) in a large science class with those found here reveals that 90% of the feedback from students in the science class was in the form of questions about the material and the mechanics of the course. The exact opposite pattern was found here in that 90% of the feedback from students concerned positive and negative comments about the course, the instructor and TAs, the environment, personal disclosures, and how the course related to their own lives. Two main distinctions can be made. The first is that the science students asked questions 90% of the time, while the communication students made comments 90% of the time. The second is that the science students' feedback was impersonal in nature, while the communication students' feedback was personal in nature. This, no doubt, is due to the focus of course content.

These distinctions have implications for the instructors who might be willing to employ feedback loops such as those described here in their courses. In a course like the science course, the feedback should be relatively nonthreatening to the instructor. The responses in class, likewise, should be fairly straightforward. However, this is not the case in a course like Interpersonal Communication. A fair amount of the feedback is negative. This can be

personally threatening. In addition, the instructor must decide which student comments to share with the entire class and the proper manner to use when commenting on them. This is not a point to be taken lightly. The instructor and graduate TA had several sleepless nights due to comments received via the box. Although the benefits of the question/comment box were great, this is not a technique for the faint of heart.

Outcome Measures

The greatest positive impact of the question/comment box was on perceptions of instructor quality in terms of being open to feedback. The whole population rated this outcome very highly ($M = 1.35$). This result is aligned with the findings of Smith, Medendorp, Ranck, Morrison, and Kopfman (1994) in terms of student perceptions of the prototypical excellent professor. Students in that study reported that both giving and requesting feedback is a critical attribute of the excellent professor.

Overall perceptions of course quality ($M = 2.10$) and student involvement ($M = 2.47$) as a result of the question comment box are moderately high indicating that employing a feedback loop had positive effects on these variables. Caution is needed in interpreting the results of learning, however. The whole population rated learning as a result of using the question/comment box as neutral ($M = 3.00$), meaning that they neither agreed nor disagreed that learning was enhanced by its use.

Within the overall pattern of results reported above, student perceptions of benefits differed by class standing and sex of student. In particular, female lower-division students reported the highest perceptions on all outcome variables, and these perceptions were significantly different than were those of male upper-division students. Ironically, the students who reported using the question/comment box most were the male lower-division students and the female upper-division students. This pattern of results suggests that the highest benefits of using a feedback loop in large classes can accrue to those who do not take direct advantage of it. This also suggests that it is critical to share and discuss student comments and questions in class in order to benefit all of the students.

CONCLUSION

Due to economic constraints in colleges and universities today, the large class is a fact of life. Negative factors and outcomes for students are likely in large classes, especially for lower-division and female students. Strategies that reverse these negative factors and outcomes for students in large classes are needed badly. One such strategy, the creation of a feedback loop through the use of a question/comment box, is reported here. While the negative personal nature of some of the comments may be threatening to instructors, the benefits of its use in terms of student perceptions of involvement, and instructor and course quality far outweigh the drawbacks.

REFERENCES AND NOTES

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Arliss, L. P., & Borisoff, D. J. (1993). *Women and Men Communicating*. Fort Worth: Harcourt Brace Jovanovich.

- Basow, S. A. (1992). *Gender Stereotypes and Roles*. Pacific Grove, CA: Brooks/Cole.
- Bate, B. (1988). *Communication and the Sexes*. New York: Harper & Row.
- Doyle, J. A. (1985). *Sex and Gender: The Human Experience*. Dubuque, IA: Wm. C. Brown.
- Erickson, B. L., & Strommer, D. W. (1991). *Teaching College Freshmen*. San Francisco: Jossey-Bass.
- Gibbs, G. (1992). Control and independence. In G. Gibbs & A. Jenkins (Eds.), *Teaching Large Courses in Higher Education* (pp. 37-62). London: Kogan Page Limited.
- Gibbs, G., & Jenkins, A. (1992). An introduction: The context of changes in class size. In G. Gibbs & A. Jenkins (Eds.), *Teaching Large Courses in Higher Education* (pp. 11-23). London: Kogan Page Limited.
- Gleason, M. (1986). Better communication in large courses. *College Teaching*, 34, 20-24.
- Hall, R., & Sandler, B. (1988). *The Classroom Climate: A Chilly One for Women?* Washington, D.C.: Association of American College, Project on the Status and Education of Women.
- Holme, T. A. (1992). Using the Socratic method in large lecture courses. *Journal of Chemical Education*, 69, 974-976.
- Huddleston, E. (1928). *Class Size at the College Level*. Minneapolis: The University of Minnesota Press.
- Jahrig, G. (1993, March 16). Classes for the masses: Crowded courses a problem at UM. *Missoulain*.
- Kozma, R. B., Belle, L. W., & Williams, G. W. (1978). *Instructional Techniques in Higher Education*. Englewood Cliffs, NJ: Educational Technology Publications.
- Pardy, R. L., & Mortensen, L. (1984). The biology hot line: Use of a telephone answering device in large classes. *Improving College and University Teaching*, 32, 188-190.
- Penner, J. G. (1984). *Why Many College Teachers Cannot Lecture: How to Avoid Communication Breakdown in the Classroom*. Springfield, IL: Charles C. Thomas.
- Rich, A. (1992). Taking women students seriously. In M. L. Anderson & P. H. Collins (Eds.), *Race, Class, and Gender* (pp. 390-396). Belmont, CA: Wadsworth.
- Smith, S. W., Medendorp, C. L., Ranck, S., Morrison, K., & Kopfman, J. (in press). The prototypical features of the outstanding professor from the female and male undergraduate perspective: The roles of verbal and nonverbal communication. *Journal of Excellence in College Teaching*.
- Stewart, L. P., Stewart, A. D., Friedley, S. A., & Cooper, P. J. (1990). *Communication Between the Sexes*. Scottsdale, AZ: Gorsuch Scarisbrick.
- Strauss, M. J., & Fulwiler, T. (1987). Interact and learning chemistry. *Journal of College Science Teaching*, 17, 256-262.
- Ward, A., & Jenkins, A. (1992). The problems of learning and teaching in large classes. In G. Gibbs & A. Jenkins (Eds.), *Teaching Large Courses in Higher Education* (pp. 23-36). London: Kogan Page Limited.

¹The items in the involvement scale included:

1. As a result of the question/comment box, I felt more involved in class.
2. Seeing the questions and comments the other students wrote made me feel more involved in class.
3. Being able to use the question/comment box made me feel like a part of this class.

²The items of the instructor quality scale included:

1. I feel that the question/comment box shows that communication from students is encouraged in this class.

2. The use of the question/comment box showed that _____ and _____ were interested in our questions and comments.
3. The use of the question/comment box made me feel that _____ and _____ were open to feedback from students.

³The items on the course quality scale included:

1. The use of the question/comment box detracted from the quality of this course.*
2. The question/comment box did not make this a better course.*
3. The question/comment box increased the quality of this course.
4. Overall, I thought the use of the question/comment box made this a better class.

⁴The items on the learning scale included:

1. The use of the question/comment box helped me to understand course material better.
2. The question/comment box enhanced my learning.
3. The question/comment box did not help me understand course material.*
4. I did not learn any more in this class than I would have if the question/comment box did not exist.

* Indicates a reflected item.