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# Why & How Instructors Grade Participation in

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Running Head: GRADING PARTICIPATION IN COLLEGE COURSES

WHY & HOW INSTRUCTORS GRADE PARTICIPATION  
IN UNDERGRADUATE COURSES

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2009

## Why & How Instructors Grade Participation in Undergraduate Courses

### INTRODUCTION

A common challenge that college instructors face is the problem of how to get their students to participate more in class. Student participation is viewed as an important factor in learning by both male and female instructors (Sadker & Sadker, 1994), and for good reason! Simply put, “students who actively participate in the learning process learn more than those who do not” (Weaver & Qi, 2005, 570). Many instructors resort to including a “Participation” component on course syllabi, allotting five or ten percent of students’ grades to alleged measures of engagement and interaction. Frequently this allotted percentage ends up as no more than a free pass, as instructors fail to define or assess criteria measuring student participation in any systematic way (Bean & Peterson, 1998).

The current study seeks to identify current instructor attitudes and practices towards grading student participation in undergraduate classrooms. The goal is to establish a framework of current practice in order to initiate academic dialogue and support further research. To this end, a survey has been created for the purpose of assessing instructors’ attitudes and practices towards grading student participation in college courses. This instrument has been piloted amongst a small group of college instructors across disciplines (n=50), and this pilot data will be presented as a preliminary investigation into why and how instructors grade participation.

#### *Why is participation important?*

A great deal of literature exists on the importance of active student engagement and its effects on learning outcomes. Various terms and theories in education revolve around this concept, including cognitivist notions of social constructivism and “active learning”, information

processing theory's "deep processing", social-interactionists' views of cooperative learning and learning communities, etc. What all of these theories have in common is an assumption that students must be actively engaged in order to maximize learning.

Rau and Heyl (1990) found that students performed better on test material that had been discussed in peer groups in class than on material which had not been discussed. Handelsman et al. (2005) measured levels of college-student classroom-engagement through four factors: Skills engagement, emotional engagement, participation/interaction engagement, and performance engagement. Out of these four factors, participation/interaction was the only one which related to both "internal and external indexes" of overall student engagement (p. 189).

### *Grading participation*

The issue of whether or not to grade participation is not a new one. In 1983, Armstrong and Boud (1983) explored ongoing challenges and arguments for and against this practice. Armstrong and Boud (1983) identify two main challenges to grading participation: difficulties in assessment, and obstruction of the teaching and learning process. Participation may be difficult to assess both because it is poorly defined, and because it can be cumbersome to track in a reliable manner. These are the problems typically cited by assessment experts who value fair and reliable scoring of any criteria which is to be included in student grading (Bean & Peterson, 1998).

While not insurmountable, these issues may continue to influence current instructors who are hesitant to incorporate participation into student grades. While acknowledging these challenges, however, Armstrong and Boud (1983) point out that assessing participation allows

students who are knowledgeable but unskilled at academic writing to express and receive credit for learning in another modality.

More recently, Bean and Peterson (1998) illustrate the ongoing ubiquity of the practice of grading participation by referencing their informal, un-cited study of university syllabi wherein 93% of core courses were found to include student participation in the grading criteria. The authors go on to note that, “our informal discussions with professors, however, suggest that most professors determine participation grades impressionistically, using class participation largely as a fudge factor in computing final course grades” (p. 33).

### *Statement of the problem*

While there is a clear assumption in the literature that many instructors choose to include “participation” on the syllabus as part of course grading criteria, there has been little exploration into how instructors define and assess this participation, or their specific reasons for doing so. There are excellent reasons to encourage participation in college classrooms, and literature suggests that grading participation may aid in this endeavor. However if, as Bean and Peterson (1998) suggest, these grades are little more than a “fudge factor”, the grading of participation becomes a serious assessment issue in higher education. This points to a need for educational scholars to explore and initiate dialogue on the practice of grading participation. To foster such dialogue, the current study seeks to establish preliminary baseline data on the attitudes and practices of active college instructors towards grading participation by exploring the following research questions:

1. What percentage of surveyed instructors explicitly grade “participation”?

2. What are the characteristics of instructors who do and do not include participation in the course requirements?
3. What are the characteristics of courses in which participation is graded?
4. How do instructors define “participation”?
5. How do instructors grade participation?
6. What underlying attitudes do instructors have about grading participation?

### *Methods*

To investigate these questions, a four-section survey was created and distributed to college instructors across disciplines via an online service as a pilot study in preparation for a more comprehensive investigation. Instructors (n=380) were asked to self-report on demographic information, grading practices, attitudes towards grading participation, and their own definitions of student participation at the undergraduate level.

## Methodology

### *Overview*

In the present study, current practices in grading classroom participation of undergraduate students will be investigated. What typifies the assessment of participation at this level? How do instructors define participation, and what are their beliefs about student participation in the classroom, and the practice of grading it? To examine these questions, a sample of undergraduate instructors will be surveyed on their practices and attitudes towards grading student participation in undergraduate courses.

### *Sample*

The current study examines the population of college instructors who teach undergraduate students in classroom settings; courses which enroll more than 50 students will be

excluded from this study. The study used a sample of instructors who teach courses at a large, northeastern state university. Instructors were recruited via e-mail and invited to complete the survey in a secure, online format.

### *Instrumentation*

The Instructor Assessment of Student Participation Survey was designed for this study. It is intended to identify college instructors who do and do not formally expect student participation in their classes (as indicated by including ‘participation’ on the course syllabus). The measure assesses instructors’ practices in grading participation, and instructors’ underlying beliefs regarding class participation. The measure was administered through the secure, online service, Survey Monkey, and consists of four parts.

The first section collected demographic information from the respondents, and all participants were asked to complete these nine items. This section requested that participants indicate their gender, their instructor status (e.g., part-time, full time, etc.), years of experience, academic discipline, and level of courses typically taught. This section also asked participants to select and indicate a particular class that they have recently taught and to refer to their policies in this class when answering the remainder of the survey. Instructors were asked to select this class based on the following criteria: The course was listed as an undergraduate course; the course had fewer than 50 students enrolled; the course was taught within the last year; if more than one course meets these criteria, then the course which the instructor has taught most frequently should be chosen.

Sections two and three of the survey asked participants to indicate their level of agreement with various statements which may or may not typify their grading practices and underlying beliefs. Participants were asked to respond on a six-point likert-type scale, where “1”

corresponded to “Strongly Disagree” and “6” corresponded to “Strongly Agree”. A six-point scale was chosen to increase variability in responses, and to eliminate a neutral response.

Specifically, section two consisted of items 12-32, and queried participants on their practices in grading of student participation in their undergraduate courses. This section was prefaced by two questions (items 10 and 11) which asked participants to indicate if the course they selected to use as a reference for the survey included “participation” in the grading criteria on the syllabus, and only participants who have selected “yes” for at least one of these items were given access to complete section two (“Grading Practices”).

Section three consisted of items 33-58, and queried participants on their general beliefs regarding student participation and the grading of student participation at the undergraduate level. All participants were asked to complete this section. Participants who responded “no” to both items 10 and 11 were not asked to answer questions on their grading practices in section two of the survey, but were automatically redirected to section three (“Beliefs”).

Section four of the survey consisted of open-ended questions wherein participants were asked to elaborate on their beliefs and practices in grading student participation. All participants were eligible to complete this section of the survey. This section allowed participants to provide information that they feel is pertinent to the subject of grading participation in undergraduates. It also allowed participants to explicate in detail any innovative methods which they may currently use to encourage or assess participation in their undergraduate classrooms. This section consisted of items 59-63.

### *Procedure*

Recruitment, selection, and administration of the instrument followed the recommendations of researchers in survey design (Dillman, 2001, 1991, 1983, 1978; Ritter &

Sue, 2007; Sue & Ritter, 2007) in order to maximize return. Instructors were contacted via e-mail and recruited. Those who consented to participate completed the Instructors' Assessment of Student Participation survey in a secure, online format. Those who returned completed surveys received a note of thanks via e-mail. Follow-up reminders were sent to those who did not return surveys following the initial email invitation.

The data were examined to determine instructor grading policies and practices. This examination constitutes a preliminary look at data collected as part of an ongoing study, and is not conclusive.

## RESULTS & DISCUSSION

The current study sought to establish preliminary, baseline data on the attitudes and practices of active college instructors towards grading participation by exploring the following research questions:

1. What percentage of surveyed instructors explicitly grade "participation"?
2. What are the characteristics of instructors who do and do not include participation in the course requirements?
3. What are the characteristics of courses in which participation is graded?
4. How do instructors define "participation"?
5. How do instructors grade participation?
6. What underlying attitudes do instructors have about grading participation?

The descriptive information presented here is a first look at a study which is still in the data-collection process.

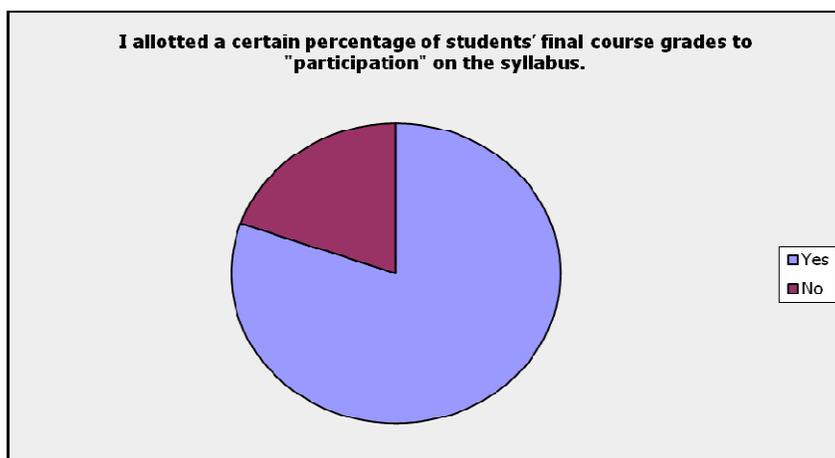
*Sample*

To date, a total of 380 participants have begun the survey. Respondents have been split fairly evenly between men (48%) and women. Approximately one third (37%) of respondents indicated that they were either tenured or tenure-track faculty members, and respondents hailed from a range of academic schools and disciplines.

#### *Who Grades Participation?*

The first two research questions ask: “*What percentage of surveyed instructors explicitly grade ‘participation’*”, and, “*What are the characteristics of instructors who do and do not include participation?*” Nearly 80% of respondents (n=244; 79%) indicated that they included “participation” as a student responsibility on the course syllabus, and of these, 169 (69% of respondents on these 2 items) indicated that “participation” was accounted for in students’ grades. Of these, 55% were women, and 60% of all those who graded participation were temporary (non-tenure-track) instructors. Only 12% of those who grade participation indicated that they were teaching for the first time this semester.

*Figure 1. Respondents who grade participation*



The third research question asked: “*What are the characteristics of courses in which participation is graded?*” Courses offered in Humanities and Liberal Arts were the most likely to grade participation (n=49), followed closely by courses in the Social Sciences (n=43). Perhaps surprisingly, instructors teaching courses in Education were the least likely to grade participation (n=8). Examination of Table 1, below, provides further information on the disciplines in which participation is graded.

**Table 1: Academic Discipline of Respondents that Grade Participation**

<b>Discipline of Respondents</b>	<b># that Grade Participation</b>	<b>%</b>
Business Administration/Economics	9	6
Education	8	5
Fine Arts	11	7
Foreign Languages	14	9
Liberal Arts/Humanities	49	30
Math & Physical Sciences	26	16
Social Sciences	43	26

*What is ‘Participation’ and How is it Graded?*

Question four asked, “*How do instructors define “participation”?*” This question was explored through the examination of open-ended responses. To date, 210 participants have responded to this item. Of these, 40% (n=85) reported that the level of the course does not alter their definition of participation, while 28% (n=58) reported that it made absolutely no difference. The remaining participants were indefinite in their responses.

Respondents were not limited in their definitions, and many chose to include several elements in their answers. A preliminary review of these open-ended responses yields 5 broad categories, presented in Table 2, below:

**Table 2: Categorical Definitions of “Participation”**

<b>Definition</b>	<b>%</b>
Voluntary Verbalizations	81
In-class Assignments	46
Attendance	24
Class Preparation/outside activities	20
Active Listening (& thinking)	18

Question five asked, “*How do instructors grade participation?*” This question was explored by examining the “Grading Practice” section of the survey, and these items are presented in Table 3, below. While 156 respondents indicated that a percentage of students’ grades was explicitly devoted to “participation”, the vast majority of these reported that the “participation” grade was for student participation *and other factors*, such as attendance. The modal percentage allotted for participation on students’ course grades was 10%.

The majority of those who indicated that they grade participation in their college courses report that they discuss what this means with their students, at both the beginning of the semester (94%), and at later points in the semester (81%). While 2/3 of respondents (67%) report that they collect specific data on participation other than attendance, 74% responded that they were able to assign participation grades holistically, without specific measurements or data. This overlap implies that while instructors may be *collecting* data on student participation, they may not always be *using* it to assign grades.

**Table 3: Instructor Practices**

<b>1 = Strongly Disagree</b> .....	<b>6 = Strongly Agree</b>	<b>Total N who responded to this item</b>	<b>% Agree*</b>
I included “participation” on my syllabus because I was advised to do so by my department.		192	19
I included “participation” on my syllabus because this is conventional in my department.		192	38
I included “participation” on my syllabus because I was using a template that included		188	18

**Table 3: Instructor Practices**

1 = Strongly Disagree ..... 6 = Strongly Agree	Total N who responded to this item	% Agree*
“participation.”		
I discussed what I meant by “participation” with my students at the beginning of the semester.	192	94
I discussed class participation with my students at later points in the semester.	188	81
I allotted a certain percentage of students’ grades to participation on the syllabus.	194	80
15-a. This percentage was purely for participation.	47	30
15-b. This percentage was bundled with another factor, such as attendance.	111	70
I collected some specific data on student participation that was <i>not</i> related to student attendance.	183	67
I used some method to actually track or measure students’ classroom participation in my course, other than attendance.	185	70
I had a good enough general idea about which students participated to assign a grade without measurements.	185	74
I have experimented with different methods to ‘measure’ individual students’ participation in classes.	181	55
Most students in this class ended up getting the same grade for participation.	179	29
I tended to end up counting participation as “extra credit” when I calculated grades at the end of the semester.	184	17
I usually didn’t make a clear distinction between a student’s grade for attendance and their grade for participation.	182	23
I only really counted participation for students who were exceptionally participatory and/or exceptionally non-participatory.	183	21
I graded participation by relying on my holistic impressions of each student.	183	43
I provided feedback to specific students on their levels of participation over the semester.	183	66
I provided feedback to all of my students on their levels of participation over the semester.	180	49
I gave a participation grade mainly as a “safety-net” grade – in cases where students’ grades seemed too high or too low, this gave me room to adjust them.	184	15
Even though it was on the syllabus, I did not count “participation” when I actually assigned course grades.	184	05
If a student challenged the grade that they had received in my class for ‘participation’, I would have records to be able to clearly explain/justify why they received that grade.	185	68

\*Indicates the percent who selected “Slightly Agree”, “Agree”, or “Strongly Agree” from the scale

*What do Instructors think of Grading Participation?*

Finally, question six asked, “*What underlying attitudes do instructors have about grading participation?*” The items comprising the “Beliefs” section of the survey are presented in Table 4, below, and examination of these items yielded interesting results. Participants overwhelmingly agreed that participation is important (95%), that they prefer it when students speak up in class (98%), that students are expected to learn and practice academic communication skills (97%) in order to be prepared for their future careers (96%).

Most respondents also indicated that one students’ participation is beneficial to the whole class (93%), and that grading participation increases course participation in students (89%). More than half of respondents in this section indicated that participation *mainly* comprises of verbal activity (57%), and more than 60% indicated that they have made it a point to explore various methods of grading participation in their courses. Approximately 1/3 of respondents (32%) indicated that they do not think it is fair to force students to participate in class, and not surprisingly, about the same number (31%) indicated that they do not think it is fair to grade participation.

**Table 4: Instructor Beliefs**

1 = Strongly Disagree ..... 6 = Strongly Agree	Total N who responded to this item	% Agree
I feel that it is important for students to participate in my classes in order to maximize learning and improve academic communication skills.	248	95
I have made it a point to explore various methods of grading participation.	243	61
I really think that, if one were to grade participation, the best way to go about would be to rely on one’s holistic impressions of the student.	241	45
I am pleased with the amount of participation that I receive from students in my classes.	244	73
I generally prefer it when students do not speak in class.	249	2

**Table 4: Instructor Beliefs**

1 = Strongly Disagree ..... 6 = Strongly Agree	Total N who responded to this item	% Agree
I do not think it is fair to force students to participate in class.	245	32
I generally prefer it when students ask questions, make comments, and speak up in class.	248	98
I feel that student participation actually gets in the way of learning in the classroom.	247	07
I do not see much value in encouraging participation.	247	01
I do not think it is fair to base students' grades on anything other than course content.	243	22
Classroom participation consists mainly of verbal activity.	235	57
A grade on "participation" is really just a grade on a student's personality.	237	12
Grading participation disadvantages certain types of students and unfairly penalizes them.	238	41
Grading participation encourages participation in students who might not otherwise participate.	234	89
If I learned of a fair and reliable way to grade participation, I would make use of it in my classroom.	231	84
Grading participation doesn't actually have any effect on how much students participate.	230	23
I consider attendance to be a component of students' participation	236	79
Participation should not be considered valid criteria for a student's grade.	233	15
Academic communication skills are one of the aspects of mastering a discipline at the higher education level.	236	97
You don't really <i>know</i> something until you can explain it to someone else.	238	89
When the students in my classes graduate, they will be expected to work collaboratively with others at their jobs.	234	96
One student's participation is beneficial to the whole class.	234	93
Student participation is likely to foster the spread misconceptions amongst other students in my class.	232	07
Too much student participation makes me personally uncomfortable.	236	06
I encourage participation, but do not believe it is fair to base students' grades on whether or not they participate.	232	31
I encourage participation, and believe it is an important component of classroom learning, but have not discovered an effective way to grade it.	236	45

\*Indicates the percent who selected "Slightly Agree", "Agree", or "Strongly Agree" from the scale

*Conclusions & Next Steps*

The preliminary results of this study indicate that college instructors tend to value participation in their students, and that the vast majority of them take steps to encourage student participation in undergraduate courses. Additionally, a solid majority report that they collect data on student participation other than attendance, however this is seemingly in conflict with a similar majority of instructors who report that they do not need to refer to measurement data when assigning participation grades in their courses. Analysis of open-ended responses which queried participants' definitions of "participation" yielded five general categories: Voluntary Verbalizations; In-class Assignments; Attendance; Class Preparation/outside activities; Active Listening (& thinking).

This research is currently in progress, and aims to collect a sample of 500 participants. Next steps include comparisons of responses, and an exploration of the measurement issues inherent in data collection. An exploratory factor analysis is planned to determine apparent constructs in participants' attitudes towards and practices in grading participation. Greater investigation of open-ended responses is expected to shed further light on survey responses and contribute to the validity of the instrument. Finally, follow-up interviews are planned to investigate particularly interesting or unique approaches to grading participation in undergraduate classes.

## References

- Ahlfeldt, S., Mehta, S., & Sellnow, T. (2005). Measurement and analysis of student engagement in university classes where varying levels of PBL methods of instruction are in use. *Higher Education Research and Development, 24* (1), 5-20.
- Armstrong, M., & Boud, D. (1983). Assessing participation in discussion: An assessment of the issues. *Studies in Higher Education, 8* (1), 33-44.
- Aultman, L. P. (2006). An unexpected benefit of formative student evaluations. *College Teaching, 54* (3), 251.
- Auster, C. J., & MacRone, M. (1994). The classroom as a negotiated social setting: An empirical study of the effects of faculty member's behaviors on students' participation. *Teaching Sociology, 22* (4), 289-300.
- Bean, J. C., & Peterson, D. (1998). Grading classroom participation. *New Directions for Teaching and Learning, 74*, Summer, 33-40.
- Brace, N., Kemp, R., & Snelgar, R. (2003). *SPSS for psychologists: A guide to data analysis using SPSS for Windows*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Boud, D. (1989). The role of self-assessment in student grading. *Assessment and Evaluation in Higher Education, 14* (1), 20-30.
- Brewer, E. W., & Burgess, D. N. (2005). Professor's role in motivating students to attend class. *Journal of Industrial Teacher Education, 42* (23), 23-47.
- Burchfield, C. M., & Sappington, J. T. (2000). Compliance with required reading assignments. *Teaching of Psychology, 27* (1), p. 58-60

- Burchfield, C. M., & Sappington, J. T. (1999). Participation in classroom discussion. *Teaching of Psychology, 26* (4), 290-1.
- Cannon, P. (2006). Enhancing understanding and interest through group discussion. *College Teaching, 54* (2), 211.
- Carini, R. M., Kuh, G. D., & Klien, S. P. (2006). Student engagement and student learning: Testing the linkages. *Research in Higher Education, 47* (1), 1-32.
- Casem, M. L. (2006). Active learning is not enough. *Journal of College Science Teaching, 35* (6), 52-57.
- Constantinople, R. R. , Gray, J. M., & Constantinople, A. P. (1988). The chilly climate: Fact or artifact? *Journal of Higher Education, m 59*, 527-559.
- Cornelius, R. R., Gray, J. M. & Constantinople, A. P. (1990). Student-faculty interaction in the college classroom. *Journal of Research and Development in Education, 23*, 189-197.
- Crawford, M., & Macleod, M. (1990). Gender in the college classroom: An assessment of the “chilly climate” for women. *Sex Roles, 23*, 101-122.
- Crombie, G., Pyke, S. W., Silverthorn, N., Jones, A., & Piccinin, S. (2003). Students’ perceptions of classroom participation and instructor as a function of gender and context. *The Journal of Higher Education, 74* (1), 51-76.
- Cutler, A. (2007). Creeping passivity. *Journal of College Science Teaching, 36* (6), 6-7.

- Dallimore, E. J., Hertenstein, J. H., & Platt, M. B. (2004). Classroom participation and discussion effectiveness: Student-generated strategies. *Communication Education, 53* (1), 103-115.
- Dancer, D., & Kamvounias, P. (2005). Student involvement in assessment: A project designed to assess class participation fairly and reliably. *Assessment and Evaluation in Higher Education, 30* (4), 445-454.
- Fassinger, P. A. (2000). How classes influence students' participation in college students. *Journal of Classroom Interaction, 35* (2), 38-47.
- Fassinger, P. A. (1996). Professors' and students perceptions of why students participate in class. *Teaching Sociology 24* (1), (25 pp).
- Fassinger, P. A. (1996). Understanding classroom interaction. *Journal of Higher Education, 66*, 82-96.
- Fritschner, L. M. (2000). Inside the undergraduate college classroom: faculty and students differ on the meaning of student participation. *The Journal of Higher Education, 71* (3), 342-62.
- Gopinath, C. (1999). Alternatives to instructor assessment of class participation. *Journal of Education for Business, 10-14*.
- Handelsman, M. M., Briggs, W. L., Sullivan, N., & Towler, A. (2005). A measure of college student course engagement. *Journal of Educational Research, 98* (3), 184-191.
- Hogan, T. P. (2003). *Psychological testing: A practical introduction*. New York: John Wiley & Sons.

- Howard, J. R., & Henney, A. L. (1998). Student participation and instructor gender in the mixed-age college classroom. *Journal of Higher Education*, 69, 384-405.
- Karp, D.A., & Yoels, W. C. (1976). The college classroom: Some observations on the meanings of student participation. *Sociology and Social Research*, 60 (4), 421-x.
- Long, H. E., & Coldren, J. T. (2006). Interpersonal influences in large lecture-based classes: A socioinstructional perspective. *College Teaching*, 54 (2), 237-243.
- McKinney, J. P., McKinney, K. G., Franiuk, R., & Schweitzer, J. (2006). The college classroom as a community: Impact on student attitudes and learning. *College Teaching*, 54 (3), 281-284.
- Nunn, C. E. (1996). Discussion in the college classroom: Triangulating observational and survey results. *Journal of Higher Education*, 67, 243-266.
- Pallant, J. (2001). *SPSS Survival Manual*. Philadelphia: Open University Press.
- Petress, K. (2006). An operational definition of class participation. *College Student Journal*, 40 (4), 821-823.
- Rau, W., & Heyle, B. S. (1990). Humanizing the college classroom: Collaborative learning and social organization among students. *Teaching Sociology*, 18 (2), 141-155.
- Ritter, L. A., & Sue, V. M. (2007). Using online surveys in evaluation. *New Directions for Evaluation* 115.
- Robinson, C. F., & Kakela, P. J. (2006). Creating a space to learn: A classroom of fun, interaction, and trust. *College Teaching*, 54 (1), 202-206.

Sadker, M., & Sadker, D. (1994). *Failing at fairness: How America's schools cheat girls*. New York: Scribner.

Sue, V. M. & Ritter, L. A. (2007). *Conducting online surveys*. Thousand Oaks, CA: Sage Publications.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics*(3<sup>rd</sup> ed.). New York: Harper Collins College Publishers.

Weaver, R. R., & Qi, J. (2005). Classroom organization and participation: College students' perceptions. *The Journal of Higher Education*, 76 (5), 570-601.