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Encouraging and Evaluating Class Participation

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Abstract

Many faculty interpret student responses to faculty questions as evidence of an actively engaged classroom. Because of this conviction, class participation, whether graded or ungraded, appears in many course syllabi in colleges and universities and is often promoted as the responsibility of students to contribute to the learning environment. Class participation provides faculty with some confidence that learning is taking place during a course and that students are reading assignments. While faculty may debate that attendance should not be used as a stand-in for class participation, this may not be a universally held belief or practice. Some faculty create rubrics which structure student participation and often delineate the tasks students should perform. Rubrics often list points, percents, and scales indicating levels of performance. This scoping review of the literature identifies themes encouraging and grading class participation and provides examples to increase class participation.

Keywords

class participation, evaluation, students, rubrics

Cover Page Footnote

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Introduction

The discovery that a part-time faculty member at our university allocated 20% to class participation for an undergraduate course raised some concerns among academic administrators. The professor based class participation on attendance and how well students presented an oral version of a paper; the professor also marked that paper separately, suggesting a potential problem. Considering the class enrollment, we doubted that each student could be reliably evaluated (Penn 2008). For neither assignment did the syllabus include a rubric outlining expected competencies or indicators of successful performance.

We saw this instance as an opportunity for performance improvement, and invited faculty to identify whether their syllabi included marks for class participation. Faculty offered examples whereby they marked class participation; some provided rubrics. A number did not mark class participation. Face-to-face and hybridised courses differed greatly from web-based courses regarding percentages allocated for class participation. Not surprisingly, detailed rubrics appeared in examples of online courses. Other submissions suggested the need for more detail on performance expectations in face-to-face and hybridised courses for marking class participation. Still others combined attendance with class participation, and a few assessed attendance as the only evidence of participation. We recognised that students' class participation in courses helped them actively engage with content, and with faculty and fellow students (Howard 2002). We also acknowledged that discussion of marking in tertiary settings invokes conversations that include terms such as subjective, mastery, criterion-referenced, bias, achievement and normative.

Literature Search

This paper presents selected literature as a scoping review (Grant & Booth 2009) on encouraging class participation and allocating class-participation marks. An initial literature review using Proquest Medical and Nursing and Medline via FirstSearch netted few citations using the search terms grading, assessment, class, participation and college. The administrators next reviewed results from ERIC, JSTOR, Google Scholar and WorldCat via Firstsearch. Some of the literature was middle-school and high-school oriented. These citations were reviewed but are not included in this scoping review.

Several overall themes specific to class participation emerged, including class-management strategies; rubrics and guidelines for marking and eliciting participation; technology support in the classroom for class participation; and peer, faculty and self-evaluation of class participation.

Class-Participation Themes

Class-Management Strategies

Many academics consider class participation evidence of active learning or engagement that benefits learning, critical thinking, writing, appreciation of cultural differences, time management and interpersonal, listening and speaking skills (Howard & Henney 1998; Peterson 2002; Petress 2006). Faculty often stipulate class participation in course syllabi as a responsibility that students are expected to perform, whether participation is graded or ungraded. However, less vocal students

may not have an incentive to participate, especially when the teacher's classroom style is autonomous and students set the policies and procedures of the course (Gomberg & Gray 2000). Additionally, some professors determine participation marks impressionistically, as a "fudge factor" in calculating final course grades (Bean & Peterson 1998). Faculty objectivity is questioned when evaluating class participation (Lyons 1989). Some doubt that class participation helps in evaluating students' knowledge, particularly in classrooms with culturally diverse students (Balas 2000).

In a classic treatment of student participation in tertiary courses, Karp and Yoels (1976) pointed out that specific organisational features of courses promote student talking in class. They examined the meanings of student participation in the university classroom, suggesting that the classroom can be viewed as a social setting. Data were collected by systematic observation of classroom behaviour in selected classes (N = 10), followed by questionnaires administered at the end of the semester. Questionnaires addressed factors that students identified as important in influencing their decisions on whether to talk in class or not. A small number (four or five) of students accounted for more than 50% of the interactions in classes per session. Student questionnaire responses supported this observation. Male student participation was higher than female in classes taught by male faculty; female participation increased to almost 75% in classes taught by female faculty. In male-taught classes, male students were more likely to be questioned by the teacher and more likely to respond to a comment by a male teacher. Students reported that not doing assigned reading, ignorance of subject matter and size of the class inhibited classroom participation. In contrast, teacher questions promoted classroom interaction. Indirect questions, whereby the teacher called out questions to the class in general, were more frequent than those aimed at specific students. Teachers reported that large class sizes and the chance that a student would appear unintelligent in the eyes of other students were the highest-ranked items affecting students' decision not to talk in class.

Students indicated that it was safe to refrain from talking; this reduced the pressure of needing to keep up with readings (Karp & Yoels 1976). Infrequent tests supported this behaviour. "Consolidation of responsibility" depicted the phenomenon whereby a small number of students on average were responsible for the majority of talk or verbal load in classes. Karp and Yoels concluded that talking too much in class disrupted its balance, with students concerned about excessive talk by the frequent talkers potentially increasing the faculty member's expectations of the whole class.

To determine aspects of marking in a randomly selected sample of university faculty, Cross, Frary and Weber (1993) surveyed faculty (N = 365; 42% response). Faculty were split when testing students, interpreting scores according to how much they knew (absolute standard) versus how much they knew about material covered by the test (relative standard). One factor evaluated was whether class participation was included in course grades; 50% reported it was not. Some faculty noted that class participation was used in marking all students; others used it to adjust some marks. A number did not record participation, but adjusted some grades overall. The investigators discussed willingness to participate in class as a function of personality, not necessarily achievement. They advised against using participation grades as surrogates for class attendance. Cross, Frary and Weber recommended that grades be based on measured achievement at a given point in time and not perceptions of students' ability or amount of growth.

Contrasting course participation to class participation, Peterson (2001) asserted that engaging in material inside or outside the classroom describes course participation. He proposed that faculty often motivate and support students' efforts at participation. Students engage themselves and

others in course material by readily speaking, thinking, reading, role-taking and risk-taking. He also suggested that teachers assign marks using assessment methods such as checklists, holistic approaches and analytic methods. Times for assessing outcomes would be daily, weekly, monthly or at the end of the course.

Peterson (2001) also examined students' documentation of their own participation, citing portfolios of work produced in the course as evidence of students' engagement. He suggested that students be allowed to document progress through the upper-division, elective course by submitting proof of participation after the mid-semester point and presenting exemplars. For example, students were charged to persuade faculty that they learned class material and actively participated in the process. One developed a press release to showcase active learning; another created a mock exam in which he demonstrated the application of skills taught in the class to the professional world. Peterson next asked students to give opinions on this atypical approach to class participation. Students appreciated the opportunity to influence their participation mark, and were more aware of participating throughout the course. Not all were happy with the strategy. Peterson considered the approach beneficial, since students prepared to participate, actively engaged in discussions and exercises, documented participation levels and applied course information outside of the class.

A token economy was instituted in an introductory psychology course to evaluate student participation before, during and after the implementation of the intervention (Boniecki & Moore 2003). The instructor posed questions and called on students in the order in which they raised their hands. A research assistant recorded the number of students who participated. After the baseline period, a token or wooden checker rewarded students when they were the first person to answer the question correctly. Tokens were exchanged for one point added to their next course mark. The last course meetings did not include the token strategy. Compared to baseline, more students responded to questions during the token economy at a statistically significant level. Significantly fewer hands were raised during removal compared to the token-economy time period.

According to Petress (2006), class participation includes three evaluative dimensions: quantity, dependability and quality. He pointed out common distracting classroom behaviours and alternatives: long-winded contributions (answers, questions and expressions of support for classmates need to be concise, specific and as relevant as possible), repetitive responses (students should be attentive and not go over old ground), participation mobilisers (students encourage low-frequency contributors) and responses that discourage others from contributing (signs of impatience, boredom or superiority expressed verbally or nonverbally). Students characterised as participation-dependable attended class regularly and did not chat privately, come to class late, early or unprepared or fail to pull their weight with classmates. They were respectful. Student participation was considered a teaching strategy only if evaluated. Petress proposed that faculty count positive and negative classroom behaviours.

Surratt (2006) described a graduate pharmacy-school course that had been converted into one emphasising written and oral communications skills. Criteria specified the marking approach for oral presentations, yet few details described the marking of class participation. Faculty based letter marks on the number and quality of comments made by students. Marks ranged from A+, or outstanding performance that could not be improved upon, to C+, indicating that the participation was unacceptable. Marks were assigned after the fifth, 10th and 15th seminars, which helped students determine consecutive ratings of performance.

In addition, Dallimore, Hertenstein and Platt (2006) evaluated a classroom strategy that included cold calling and marked participation to stimulate more graduate students to engage in class discussions. They evaluated the effect of the environment on student preparation and comfort. The pre-test/post-test design study used a questionnaire on participation frequency, preparation and comfort in the MBA course. Results indicated that cold calling and marked participation were associated with preparation for class, frequency of participation and comfort with class participation.

In contrast, Tatar (2005) explored silence as a communication pattern of class participation with four Turkish graduate students attending an American university. Field notes describing 48 class sessions of participant behaviour, 26 interviews, a focus-group interview, course syllabi and handouts generated data. Students used silence as a face-saving strategy and protection of public image and described themselves as silent students, using silence as a means of participation while remaining mentally active in class. They were uncomfortable with free-flowing discussions, using silence as a reaction to other students' contributions and as a sign of respect for authority and concern for others. Their feelings about language skills led them, as non-native speakers, to feel like cultural outsiders. Tartar recommended that silence should be seen from different perspectives, and not an indicator of lack of knowledge or interest. Cross-cultural topics might help students share perspectives more readily.

Various class-management strategies promote class participation. Examples consist of teachers' awareness of potential gender differences in participation considering both faculty and student gender, marking participation, faculty motivation, student assignments that demonstrate evidence of engagement and tokens rewarding correct answers to questions and increasing course marks.

Rubrics and Guidelines

Rubrics and other guidelines provide details of performance expectations in courses, and include a range of marks for levels of class participation. Rubrics are **explicit, structured criteria used for assessing and scoring a particular type of performance**. Teachers specify assignment expectations by identifying parts and detailed descriptions of those parts (Stevens & Levi 2005).

The components of a rubric are often arranged in a table. Stevens and Levi (2005) typify this table as including the task description that students are expected to perform; a scale detailing how well or poorly the task is performed (e.g., excellent, competent, needs work); a breakdown of the dimensions of the task; and an identification of the highest level of performance identified. The percent for each dimension is listed, as are the points earned by the student. Rubrics may help faculty provide timely feedback, facilitate communication among teaching assistants and learning-support staff and help refine teaching skills. Students might benefit by increased critical thinking; such rubrics could also "level the playing field" for non-native-English speaking students (Stevens & Levi 2005).

Consistent with promoting the benefits of rubrics, Lyons (1989) recommended that explicit performance criteria be established to evaluate class participation, and suggested that this would decrease student anxiety. He used behaviourally anchored rating scales applied to a series of statements by which to evaluate poor, adequate and good performance in class discussions. Students submitted examples of behaviours that were revised, scaled and distributed to peers as performance standards.

Proposing that students adjust study habits accordingly when their class participation is marked regularly and consistently, Bean and Peterson (1998) maintained that scoring rubrics help instructors assess classroom participation. They offered a holistic rubric for scoring class participation, including a six-point scale with descriptors, and identified problem areas in the assessment of class participation. The first strategy was creating activities by which students reported on homework completed previously, potentially addressing the problem of quiet students who may be more comfortable speaking in class if they prepare ahead of time. Next, they recommended conducting class discussions by email to help shy students participate. Third, after posing a question in class, faculty might wait for a longer time period so that students could structure their replies. They suggested using a filing-card system, eliciting student comments for identifying responses to questions asked during discussion, and also advised assigning students as class observers to help reduce the impact of discussion dominators. Bean and Peterson proposed inviting students who do not successfully participate to a separate meeting where they could give their perspectives and concerns.

Craven and Hogan (2001) shared a rubric for collegiate classrooms. The class-participation assessment rubric assigned points for various levels of participation (exceeds, meets or fails to meet expectations). Factors assessed consisted of communication, sharing sources and resources, openness to learn, respect, acceptance and provision of constructive criticism, material preparedness, academic preparedness and class presence. They connected class participation to classroom management, arguing that instructors' ability to maximise students' participation resulted in their learning how to organise knowledge and apply it to new situations. The authors suggested that rubrics should be discussed extensively with students prior to assessing performance.

Subsequently, Siegle, Ward and McCoach (2001) conducted an action research investigation to determine the nature of student participation using an electronic bulletin board system. They studied graduate students' postings in educational research courses. Faculty used a grading rubric which was shared with graduate students:

Level 1 - C: Student messages explore the topic or issue by identifying and organising relevant facts, developing or deriving logical conclusions and presenting them to fellow students and the instructor.

Level 2 – B: In addition to (1), students provide examples related to the topic and interact in a dialogue that involves challenging or supporting ideas that others have proposed.

Level 3 – A: In addition to (2), students initiate new threads of related discussion in the content of the group and individual understandings that emerge in the dialogue. Students explain how a new or previous concept connects to the current concept (Siegle, Ward, & McCoach 2001, p8).

Most students (93%) entered the required three posts per unit, with approximately 75% of the posts at Level 3. The investigators found a moderate, positive correlation between the number of posts students made and their score on the course examination ($r = .58, p < .05$), and concluded that those mastering the material were more confident and more likely to post responses to the discussion. Student-led discussions involved more students. The investigators suggested that faculty create a meaningful purpose for students to participate in web-based discussions.

A series of syllabi was submitted at the invitation of the Policy Studies Journal (Policy Studies Organization 2009). A review of the six syllabi focused on describing guidelines on class-participation marking criteria. The Introduction to Public Administration (Prof. Manna) course allocated 30% to class participation and attendance. Class participation required attendance at every class and active class participation. Discussion on class material was an explicit expectation.

The professor distributed a class-participation rubric that documented excellent participation. The next course, Politics of U.S. Public Policy (Prof. Pralle), specified participation in seminar discussions at 15% of the course mark. Two to three students were designated to lead class discussions, and all students were expected to participate each week. The overall scale was A+/A (stellar contributions), A- (solid contributions), B+ (acceptable contributions) and B (less than desired contributions). Attendance was required at every seminar (Policy Studies Organization 2009). Comparative Healthcare Systems: Policy Challenges and Economic Perspectives (Prof. Rosenau) included 40% of the final mark for seminar participation. Specific criteria detailed participation expectations, student leadership and presentation of assigned articles, which they summarised for class.

The Introduction of Public Policy (Prof. Sarbaugh-Thompson) course assigned 10% of the final mark to attendance/participation (Policy Studies Organization 2009). In addition, the Advanced Seminar in Public Policy (Prof. Schultz) specified a class requirement of 20% for class attendance and participation. No rubric or criteria were supplied. Lastly, the Seminar in Public Policy Analysis (Prof. Stanley) allotted 500 points to be earned to achieve the highest possible score of A. Of this total, 100 points could be earned for participation/attendance. To earn these points, students assisted in the presentation of reading material for one to two classes in a group presentation of arguments in the literature assigned for the week. Organisation, planning, visual aids, speaker enthusiasm and voice projection were identified as structures, in addition to critique points on thoroughness of covering the material, projection to the class, amount of class discussion stimulated and the time used for the presentation (not to exceed 30 minutes).

Different techniques assessed student learning in an elective women's health course for doctor of pharmacy students (Marshall 2010). Overall, 60% of the class mark was allocated to class participation and marked active-learning activities. Class participation was evaluated three times during the semester for feedback and opportunities for improvement. The following evaluation rubric was used:

< 70% (Disrespectful of peers or faculty, attendance problems, or rarely participates in classroom activities or discussion);

70% - 80% (Respectful of peers and faculty; anticipates classroom activities and discussions, but rarely takes leadership role);

80% - 90% (Encouraging and respectful to peers/faculty; takes a leadership role in some classroom activities and discussions);

90% - 100% (Encouraging and respectful to peers/faculty; takes a leadership role in many classroom activities and discussion) (Marshall 2010, p3).

The course evaluations (N = 21, 100%) revealed that the amount of in-class opportunity to achieve a fair participation mark was sufficient.

Rubrics and guidelines help faculty communicate course expectations. A number of options are provided in the literature and often shared among faculty. Example rubrics are also available on the internet for faculty to experiment with; evaluation criteria include participation, preparation, contributions and interactions (Class participation rubric and guide n.d.). Publicising the rubric as part of the course syllabus empowers the student by letting them know exactly what the faculty are looking for as part of this evaluation method.

Technology Support in the Classroom

Technologic innovations also contribute to students' active engagement in class activities. Clicker technology, an audience or classroom response system, has become more popular in recent years as a means of engaging the millennial learner who seeks an interactive learning environment. These devices engage all students in the classroom without the fear of being put on the spot to answer a question. Students respond to polling questions during a lecture, and responses are tallied and projected for the entire class.

The feedback gives students an awareness of where they need remediation in course content, and gives the faculty insight into where to focus that content according to student needs (Berry 2009; Jones, Henderson & Sealover 2009). Clickers can also increase student preparedness and attentiveness in class (Revell & McCurry 2010). In addition, Meedzan and Fisher (2009) explored student satisfaction with the use of clickers in an undergraduate health-assessment course. Students reported satisfaction with the use of the clickers and enjoyed the feedback and the interaction that the clickers provided.

Examining the use of clickers as a student-response system in a didactic pediatric nursing course, Berry (2010) compared exam scores, final course scores and student satisfaction in students using clickers versus those who did not. Actively engaged and digitally literate students might retain more material in courses using emerging technology such as the clicker system. Students in the experimental group came to class having completed take-home quizzes and received feedback immediately about content during class. Discussion on topic areas increased. Students reported greater involvement during lectures and were positive about clicker use. One exam mark and the final course scores differed at a statistically significant level ($p < .01$). The anonymity of the responses increased student participation and encouraged interaction with classmates in discussions. Students, however, were concerned about the cost of the clickers.

Revell and McCurry (2010) evaluated the effectiveness of a personal response system on student learning in both small and large classes. The technology was integrated in an undergraduate nursing research course ($n = 33$) and a medical-surgical nursing course ($n = 116$). A variety of question formats were integrated in the classroom, such as multiple choice, true-false, fill-in-the-blank and multiple-response questions. The investigators found that the clickers were easy to use and provided an effective means of engaging the students in both class sizes.

Clicker technology can offer faculty an objective means of measuring student participation, letting them collect classroom attendance and students' responses to questions (Berry 2009). As Cross, Frary and Weber (1993) have noted, attendance alone can rarely be justified as a factor in evaluating achievement. Also, who participates in class can be a function of personality, and thus provide a distorted measure of achievement. In addition to clicker technology, other factors, such as who evaluates class participation, are worth considering.

Peer, Faculty, and Self-Evaluation of Class Participation

Some alternatives to faculty evaluation of class participation have been studied, including comparisons to other assessors. Gopinath (1999) pointed out that academics have concluded that students either overrate or underrate themselves. One investigator (Melvin 1988) reported a strong association between class participation marks from the professor and peer median ratings (p138).

He suggested that with more than 27 to 30 students enrolled, it is difficult to rate class participation.

Additionally, the validity of peer and self-evaluation compared to professors' marking of class participation was examined over three courses (Ryan, Marshall, Porter & Jia 2007). The marking scale ranged from 1 to 4, with percents and descriptors provided. Consistent with earlier studies (Burchfield, & Sappington 1999; Dancer & Kamvounias 2005), self-evaluation marks were higher than faculty marks. The association between faculty marks and grade point average (GPA) was very weak and not significant. Students did not appreciate peer evaluation of performance. Faculty marks were higher than peer marks (Ryan et al. 2007).

Summary

Class participation was variously described as classroom discussion (Burchfield, & Sappington 1999), talk, verbal load (Karp & Yoels 1976), comments, responses to oral questions (Cross, Frary & Weber 1993) and loquacity (Williams 1971). Perhaps over half of university faculty rely on class participation to evaluate student performance. However, whether participation is marked or unmarked is not always known to faculty teaching courses in the same discipline.

Some generalisations emerged in this scoping review of the literature. For example, teachers are convinced that students learn best when they take an active part in the learning process (Petress 2006), and that meaningful learning occurs when students are engaged (Craven & Hogan 2001). Other perspectives are that attendance alone can rarely if ever be justified as a factor in evaluating achievement and should not be marked. Nevertheless, attendance, while not the same as participation, is essential for participation.

Potentially useful examples of strategies to increase class participation and marks abound. Some faculty use rubrics to structure class participation and to provide students with indicators of performance by which they will be marked. Rubrics describe performance expectations and include rating scales and percentages for student review. Also, clickers encourage participation and their use calls for further investigation.

Faculty development program

The findings from this literature review formed the basis of a development program held for faculty at the beginning of the academic year. Using clicker technology, we were able to survey faculty about their beliefs regarding the value of classroom participation and share various approaches culled from the literature. This generated a lively discussion, from which it emerged that faculty agreed that attendance alone is not a satisfactory measure of performance, and that if classroom participation is valued, it needs to be measured objectively.

Table 1 identifies a summary of these approaches, and might be a starting point for faculty to take another look at the sometimes-contentious issue of marking class participation. Faculty should continue to develop innovative strategies to encourage participation and rubrics to specify and evaluate performance. More research and debate could bring the challenging issues associated with marking class participation forward and substantiate faculty use.

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Table 1
Examples of Approaches to Increase and Evaluate Class Participation

Strategy	Examples	References
Rubric	Use a rubric with clear expectations for students; define acceptable performance; include criteria for scoring participation Online rubric: categories for rubric include promptness and initiative; delivery of posting – spelling and grammar; expression within posting – relevance of posting with proper referencing; contribution to learning community – effort toward development of collaborative learning environment Evaluate participation three times during semester for feedback and opportunities for improvement	Bean & Peterson 1998; Craven & Hogan 2001; Edelstein & Edwards 2002; Marshall 2010; Siegel, Ward & McCoach, 2001
Questions	Open or whole-class discussion: faculty pose questions aimed at involving all class members in discussion Socratic: faculty pose question, then call on students at random Cold call: when teacher calls on student whose hand is not raised; positively related to student preparation and frequency of participation; motivates students to read assigned material Cold call on low-frequency and high-frequency participants to avoid perception of being singled out Strategies to “warm up” cold call: give students time to compose/reflect an answer; tell students question before class so they can prepare; allow students to work in small groups and then ask for group response; use simple questions early in course to create pattern of trial and success Tokens: significantly more students raised hands in response to instructor questions during token period; tokens increase student attendance, enthusiasm, and preparation Include e-mail response as participation Increase wait time after posting questions on line Use card system for shy students so they can write down responses	Bean and Peterson 1998; Boniecki & Moore 2003; Dallimore, Hertenstein & Platt 2006
Group-Participation Strategies	Students work in small groups toward a consensus solution to achieve collaborative learning Ask students to rate themselves to stimulate reflective thinking about their role in class discussion Quiet discussion dominators; assign an observer of classroom participation for a day Invite less-vocal students to participate or use small discussion groups: helps to share ideas and reduce pressure of public speaking	Bean & Peterson 1998; Gomberg & Gray 2000
Preparation	Create expectation that preparation for classroom discussion is crucial to success Create activities where students report on homework already prepared	Bean & Peterson 1998; Burchfield & Sappington 1999
Student Attributes	Willingness to participate may be more a function of personality than indicative of knowledge Active participation was related to positive self-esteem, low insecurity, superior language skills and originality of thought Males received higher class-participation scores than females Male students played more active role regardless of teacher’s gender; with female instructors, female participation increased “Problematic” students needed individual coaching	Bean & Peterson 1998; Cross, Frary & Weber 1993; Dancer & Kamvounias 2005; Karp & Yoels 1976; Williams 1971
Teacher Attributes	Teaching style: student-centred Strategies: encourage timely attendance, timely assignments, quality learning tasks, class participation Students believe they can tell very early in semester whether or not an faculty really wants classroom discussions	Dancer & Kamvounias 2005; Gomberg & Gray 2000;

	<p>Attend to the classroom process</p> <p>Minimise threat: norm in classrooms is to avoid direct personal confrontation between faculty and students</p> <p>Tutors reliably assess class participation with use of explicit criteria</p> <p>High expectations on part of faculty an important motivator for students</p>	<p>Jones, Henderson & Sealover 2009;</p> <p>Karp & Yoels 1976;</p> <p>Williams 1971</p>
Classroom Environment	<p>“Consolidation of responsibility” exists where a small number of students who can be counted on comment in class and are responsible for majority of talk in classroom</p> <p>Students expect that group of “talkers” can be relied on to answer questions</p> <p>Talking too much in class can upset normative balance of classroom and may increase faculty’s expectation of other students’ participation</p> <p>Faculty need to call on students; otherwise, there is no obligation to keep up with reading assignments</p>	<p>Karp & Yoels 1976</p>
Items and Rankings on Instruments	<p>Some faculty mark participation; others set expectations without marking</p> <p>Scales must be customised to each course</p> <p>Examples of criteria: preparation; contribution to discussion; group skills; communication skills; attendance with punctuality</p> <p>Faculty ask students about features of class discussions that have gone well and create master list of traits and features of ideal discussion to assess whole-class discussion</p> <p>Process for development of scales: Explain to students that participation is an important component of course and their mark. Ask students to write at least one example each of poor, adequate and good performance in classroom discussion. Review responses and rewrite into an expectations format. At next class meeting, ask students to rank items. Average rankings and calculate standard deviations. Prepare final scale, using at least six items to anchor the scale. Distribute scale to students and describe how it will be used.</p> <p>Behaviourally anchored rating-scales approach makes performance expectations clear: operational definitions</p> <p>Involve students in development of criteria to assess participation</p>	<p>Bean & Peterson 1998;</p> <p>Dancer & Kamvounias 2005;</p> <p>Lyons 1989;</p> <p>Melvin 1988</p>
Technology-Inspired Strategies	<p>Faculty need to create purpose for web discussions and work toward creating sense of community among learners</p> <p>Students must feel comfortable with technology; opportunities to practice are necessary</p> <p>Online discussion groups with 10 participants might be optimal</p>	<p>Siegel, Ward & McCoach 2001</p>
Clickers	<p>Clickers increase student involvement</p> <p>Students review materials prior to class in preparation for clicker quiz</p> <p>Awareness of where students need help understanding content; allow faculty to focus course to fit student needs</p> <p>Clickers collect and record classroom attendance; faculty print out each students’ responses to questions to document attendance</p> <p>Students are comfortable participating without fear of being put on the spot to answer questions</p> <p>Clickers engage every student in the classroom, allow students to gain immediate feedback; provide feedback on how well they are prepared for class</p> <p>Clickers provide faculty with a barometer of how class stands as a whole</p> <p>Clickers promote student-faculty interaction and collaboration among learners in game format</p> <p>Students are satisfied with clickers, enjoy feedback and interactions</p> <p>Personal response systems (PRS) promote active learning, increase participation and provide students and faculty with immediate feedback regarding comprehension</p> <p>Technology use capitalises on characteristics and learning styles of millennial learners</p> <p>Multiple choice, true-false, fill-in-the-blank, multiple response, and chart exhibit response questions are used</p> <p>Students rated PRS technology equally effective in large and small classes</p> <p>Students appreciated exposure to various types of questions; overall, the PRS increased students’ preparedness and attentiveness</p>	<p>Berry 2009; Jones, Henderson & Sealover 2009; Meedzan & Fisher 2009; Revell & McCurry 2010</p>

