

Asking Questions: Promoting student-faculty interchange in the classroom

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Remember how, as a student listening to a lecture, your attention drifted between the words of the professor and sundry personal thoughts? A particular class might have been uneventful had not the speaker suddenly changed pace and begun directing questions at the class. If silence prevailed the teacher, intent on gaining a response, often resorted to a favorite weapon for class participation: “calling on” students.

How Students Feel About Being Called On

We can remember feelings of dread while waiting and hoping that we would not be the one singled out when teachers initiated direct questioning. To find out whether students today feel the way we once did, we surveyed our introductory psychology students about their reactions to a number of common teacher behaviors. What we learned was that more than half of the nearly 200 students either disliked or strongly disliked being called upon, and only 12 percent liked it. We also found negative responses for other teacher practices such as returning exams in order of highest to lowest grade (84 percent negative), not returning exams face down (66 percent negative), and posting name and grade (65 percent negative). Each of these behaviors directs attention to a particular student and publicly reveals the person’s level of performance, but the one with the greatest potential for embarrassment is calling upon students when their hand is not raised.

Why Do Teachers Call on Students?

There are undoubtedly dozens of reasons teachers call upon students, but the most obvious ones are to get their attention and to elicit participation. Still, we should distinguish between reasons for asking questions in general, and reasons for asking questions of particular students. Some questions are motivated by teachers’ concerns that they are (or are not) getting the material across and their need for feedback. Teachers may also seek to facilitate learning by getting students to think at a deeper level about the topic (e.g., explain or apply a concept) or to seek diverse perspectives on an issue.

Sometimes, however, we pointedly focus on particular students. For example, we may call upon quiet students in hopes of gaining participation from someone other than the usual “talkers.” We may also try to encourage a student to speak whom we think might know the answer. Less lofty reasons, of course, are to confront (and possibly embarrass) those who are talking to others and not paying attention to us, or have not read the material or done the homework, or who have annoyed us in some other way. Alternatively, we may be just plain bored with the class (it happens) and decide to adopt a change of pace to get everyone including ourselves interested again.

Is Being ‘Called On’ Really Aversive?

Regardless of our motivation, if students perceive being called on as punitive, they may engage in actions to prevent us from being successful. With the help of several student “experts” who had previously told us about their reluctance to speak in class, we developed a behavior checklist to find out what students do to avoid being called on in class.

The “top five” behaviors that 125 introductory psychology students said they use to avoid being called on (each endorsed by over 50 percent of the sample) included:

- Avoid eye contact.
- Look like you are thinking of the answer (but have not come up with it yet).
- Act like you are looking for the answer in your notes.
- Act like you are writing in your notes.
- Pretend to be reading something course-related.

Other responses included dropping a pen or notebook to look busy, hiding behind the person in front of you — and even a write-in response: pretend to be asleep. Constructive, preemptive participatory behaviors — such as raising one’s hand to say something related to the topic or to ask a question about the topic — were endorsed by less than 20 percent of students.

That active participation promotes learning is a fundamental belief among educators, and one can hardly fault teachers for seeking ways to encourage interchange with students in class. However, the attention and energy students direct towards avoiding being called on suggests that this teacher behavior may not be the best way to engage them. At the very least, it is counterproductive when the students we want to reach become instead defensively motivated to direct their energy and mental activities into avoidance behavior. At worst, feelings of shame and embarrassment drain cognitive resources that students might otherwise direct towards learning. To avert these negative consequences, we offer a sample of alternative teacher behaviors that may increase student participation and decrease their avoidance behavior.

Setting the Stage for Voluntary Participation

Create An Environment Conducive to Participation

To achieve student participation without calling upon them, the teacher needs to create an environment where students feel psychologically safe in taking the risk of asking a question that may make them look ignorant or volunteering an answer that may turn out to be wrong. Class size is not the essential factor in creating an environment supportive of participation. We can all think of small classes we have attended (or taught) where teachers had difficulty getting student participation. And even in a large class, the instructor who is motivated to do so can produce active interchange with students. More important than class size, teachers’ desire for interaction with students, the nature of the questions teachers ask, and the way they respond to students’ questions and answers play a critical role in determining whether communication in the classroom blossoms or dies on the vine. The suggestions we offer below can be adapted for either large or small classes.

Establish A Norm of Participation

- Have students interact during the very first class. A two-minute ice breaker (e.g., “Get to know the persons around you”) changes the whole atmosphere in the classroom from passive to active.
- Let students know, through your words and actions, that you expect to hear from everyone at least once within the first three weeks of class.
- Learn students’ names and use them when responding to reinforce participation. To help you learn their names quickly, bring a digital camera to class and photograph students in small groups.
- Consider asking students to keep a record of their contributions — what questions they answered or asked — and collect the logs periodically. One student we know created a daily participation chart for all of her classes. The act of record keeping sensitizes students to their participatory behavior.

Safe Questions Break the Ice

A simple way to get some sign of life is to ask students for a non-verbal response:

“Let’s have a show of hands ... how many of you think that . . . ?” You can then follow up with, “Okay, let’s hear some reasons people think that ...” Other safe questions and processes include:

- A planned pairing of a closed ended question requiring a single fixed answer (e.g., “Have you ever observed ... ?”), followed by an open-ended question (“Why do you think that happens?”) starts an interchange.
- Questions that ask for factual answers, or for answers called out in unison, signal to students that you want their involvement. This level of question serves as an attention-getting precursor to questions requiring a higher level of mental processing.
- Rapid brainstorming (without commenting) can generate numerous ideas with minimal personal threat to the contributors. Jotting them on the board gives students time to think. Keep saying, “Okay, what else?” to keep things going.
- Non-threatening questions help get participation started. A good example is “How do you feel about ...?” To encourage a wide range of responses, set the stage by stating that you expect to hear some opposing or “far out” views.

Increasing Student-Faculty Interchange

Monitor Your PPQ Ratio

How much participation per question (PPQ) do you get in class? When many students offer answers to a question, the ratio is high. A consistent pattern of stony silence lowers the PPQ ratio but more importantly leaves teachers feeling frustrated at the very least, and possibly vindictive at worst. The absence of student response may well be the most common stimulus for initiating “calling on” behavior. Adopting the do’s and don’ts below will increase the participation quotient and stimulate student-faculty interchange.

When Nobody Volunteers an Answer

What is your most effective weapon when students do not volunteer an answer to your question?

Silence. Meet their silence with your silence. Wait . . . A common teacher communication failure is not to wait long enough for students to respond. Good (and bad) questions often require a few moments of reflection for students to make connections or retrieve prior learning. Count to yourself (one thousand one, and one thousand two) for five seconds until students fill the gap. It may seem like forever, but be assured that if *you* are feeling pressure, your students are feeling it even more. Someone will eventually break the silence, and after one person speaks, another usually quickly follows.

Instructors who do not wait long enough for a response may compound the problem in several non-facilitating ways (Napell, 1976). One self-defeating teacher reaction is to answer the question they just asked. Besides being personally unsatisfying, answering your own question sends a message to students that they do not have to respond. The tactic may also reinforce teacher misgivings about student motivation and ability. Better to wait for a hand to go up.

Another ineffective tactic is to immediately ask another question, or restate the first one, in rapid succession. Rather than facilitating thinking, however, asking multiple questions is more likely to confuse students who may still be thinking about the original question.

Get Maximum Mileage Per Question

To increase your PPQ, experiment with the student activities below:

- *Turn to the person next to you.* If you call on one student, only that student is involved, not the rest of the class. Many others will undoubtedly choose to engage in one or more of the avoidance behaviors described above. Instead, have students turn to the person next to them to answer the question. In less than two minutes you will have engaged the full class and can elicit varied responses from students throughout the room.
- *Jot down your answers.* Before beginning a discussion, ask students to jot down their answers to one or two questions. Writing primes the pump and may produce a greater variety of answers. More students will volunteer answers when they have something written in front of them.
- *Summarize key points.* Near the end of class, or the end of a topic or discussion, ask students to write down the key points they would tell others if they had to teach the material to them. Going rapidly around the room afterward with students stating what they think was important provides a quick review of the material covered and, in addition, gives you the opportunity to fill in any serious gaps.

Other teacher activities that will increase PPQ are to:

- *Hand out questions in advance.* Or tell students ahead of time what you are going to ask. Especially for shy students, having the opportunity to prepare their response makes them feel more comfortable about volunteering an answer. Another beneficial effect is that more students will have done the reading before coming to class. The quality of the questions you ask may also benefit from the forethought.
- *Forecast questions before playing a video.* Write discussion questions on the board before showing a video. The questions focus students' attention as they watch and will produce more active mental processing of the information and a greater readiness to respond afterwards.
- *Design small group activity.* Even a large lecture class can benefit from the change of pace that

occasional small group interaction provides. Although group activity can be time consuming, a teacher who carefully structures a task for students sitting near each other to work on creates a high degree of engagement. Enhance student-to-student interchange by asking groups to report out and to respond directly to each other. Kramer and Korn (1999) offer useful suggestions on how to form groups and implement the fish-bowl technique in large classes.

Responding to Students' Answers in Ways That Promote Interchange

Traditional teacher questioning follows a repeated *IRE* pattern: teacher Initiates with a question, student Responds, and teacher Evaluates (Van Zee & Minstrell, 1997). No instructor who assigns grades to students would argue that evaluation is not a significant part of the teacher's role. Yet evaluation, as Carl Rogers once said, is the single greatest obstacle to interpersonal communication, and so it is in the classroom. Students' fears of negative evaluation and thoughts about potential negative social consequences drive their defensive behavior and underlie their avoidance of risking participation.

To their credit, most instructors are sensitive to student vulnerability and tactfully correct a wrong answer. Still, if one thinks in terms of learning principles, the teacher's implied or actual criticism functions like punishment, decreasing students' subsequent question-answering behavior. Some techniques, however, encourage continued participation and avoid the negative consequences of evaluation:

- *Acknowledge without evaluation.* If you ask an open-ended question that has no single predetermined "right" answer, you can accept each contribution neutrally and quickly move on to the next one. Nod your head and say, for example, "Okay," "Thank you for that contribution," "I see," "That's an idea," etc. Deliver praise for the act of contributing, not for the correctness of the answer. You can always discuss "incorrect" answers later, independent of the persons who suggested them.
- *Do not reinforce the first "right" answer (even if it is a good one).* Continue eliciting and acknowledging contributions. It is easy to become excited when the first student's response is the one you were hoping for, but reinforcing that first response may actually serve as a participation-stopper. As Napell explained, other students turn off their interest ("Why bother?") when they believe teachers have already received the answer they were seeking.
- *Apply active listening techniques.* Nothing is quite as reinforcing as when the teacher paraphrases and accurately reflects back what a student said. Similarly, teachers validate a student when they refer to an earlier remark a student made and credit the person by name.
- *Deal with "the talkers."* They are the students who raise their hand too often to answer questions and make it easy for the rest of the class to sit back and passively observe. This is one time when it is good to avoid eye contact! Look out towards others in the room and say, "Let's hear from people who haven't spoken yet," or "We haven't heard from people in the back of the room." Move around the room so that more students than just front row dwellers will experience the physical proximity to you that makes it easier to ask and answer questions.
- *Practice the "Reflective Toss."* The reflective toss is a metaphor for the discussion process in which the teacher "catches the meaning" of a student's statement and "tosses" responsibility back to the student and to the whole class (Van Zee & Minstrell, 1997). Unlike the *IRE* (teacher-student-teacher) sequence, the reflective toss shifts the focus one turn, to sequences of student-teacher-student interactions and promotes open discussion in the process.

At its simplest level, an instructor uses the reflective toss by responding, “What do you (or the class) think?” in response to a student question. By encouraging students to respond to each other, and to elaborate on their own and each other’s thinking, teachers maintain the interchange by keeping the ball in the students’ court. Providing training in discussion skills, as Kramer and Korn (1999) suggest, can improve the quality of the discussion.

Helping Students Ask Questions

To become active participants in their learning, students must ask as well as answer questions. Yet, the act of asking a question also entails risk. Some ways instructors may facilitate the process:

- “*Any questions?*” Asking for questions this way may not be the best way to signal interest in hearing from students. However, a simple change in wording invites students to respond. “What questions do you have?” or “Okay, let’s hear some questions” conveys your expectation that students do have questions and your desire to hear them. Nothing is quite so disheartening, however, as when after explaining (brilliantly) a difficult concept, a student asks, “Will that be on the test?” To lessen the frequency of the non-sequitur question, ask for procedural questions at the beginning of class (West & Pearson, 1994). Answering questions on students’ minds about assignments, due dates, etc., will free up their cognitive resources for better use during class.
- “*No dumb questions.*” No matter how many times students have heard “there are no dumb questions,” many continue to withhold questions. To make it easier for them to ask, a teacher might say, “Lots of people have questions they think are ‘dumb’ — let’s hear some dumb questions....” We have been surprised at the results when students feel that it really is all right to ask the “dumb” questions on their minds.

Still, many students need “permission” to ask, and need knowledge about different kinds of questions. In a recent convocation address to students, Perlman (2003) urged them to risk questioning and to learn how to phrase questions to produce a positive interchange. He suggests some types of questions below:

- *Simple process questions.* Faculty can assist students by encouraging them to ask simple process questions like “Could you please give an example?” or “Could you please go over that again” when something is unclear. We can also illustrate the importance of phrasing by relating the often-told tale about the student who returns to class after an absence and asks, “Did I miss anything important?” — rather than “What did I miss?” In this way students also develop social skills as part of the student-faculty interchange process.
- *Intellectual questions.* It may seem obvious to us, but some students need to be told that we want them to ask questions. Encourage questions about ideas and concepts they find interesting, or confusing — or that relate to topics covered in other classes.
- *Personal questions.* Teachers who feel comfortable bringing aspects of their personal life into class may invite student questions about their lives and experiences. This type of interchange develops relationships that produce a sense of community and gives meaningfulness to students’ education.

Questions That Develop Cognitive Skills

To improve the *quality* of participation — and importantly, develop students’ cognitive skills — it is worth

becoming familiar with the ways that different kinds of questions can elicit different levels of thinking. We recommend entering the phrase “Bloom’s taxonomy” in Google to discover a wealth of useful information about model questions and key words to stimulate questions and responses appropriate to students’ cognitive level.

The ‘Bad’ Class

Sooner or later we all experience a “bad class.” Nothing works; students sit there, responding grudgingly at best. When that happens, the worst thing to do is develop an adversarial relationship with the class. Just as *you* know that things are not going well, so do the students. It is often wise to acknowledge the reality and take a proactive approach towards change. A good opening is “Let’s talk about how the class is going . . . what can I do to make this class a better experience for you?” — followed by your paraphrasing their feedback. Alternatively, some teachers (and students) may prefer anonymous written comments. In either case, an open, flexible, and non-defensive approach to a difficult class is the best way we have found to win students over.

Finally, Still Desperate for a Response ...

One popular statistics teacher we know tackled the problem of non-participation through the blatant use of behavior modification techniques. Armed with a bowl of wrapped candies, she tossed one out for each correct answer volunteered. Needless to say, students’ rate of response increased dramatically — as did her evaluations!

Your Suggestions

How do you increase participation in class? If you introduce (or adapt) any of these ideas, we would like to learn about your experiences. Please e-mail us, and we will compile and disseminate the results.

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