Brian Martin, senior lecturer in the Department of Science and Technology Studies, takes an unconventional view of his role as tutor. He argues that it is his responsibility to ensure that students get the most out of their tutorial sessions by participating fully. Here he describes a number of activities he uses in order to foster the kind of contributions which he believes will lead to students developing a greater understanding of the issues and concepts they study.

Increasing Student Participation in Tutorials

Brian Martin

Students learn best when they are actively participating rather than just listening. Yet when I walk by tutorials in progress, all too often it is the tutor who is speaking. Is it a lecture or a tutorial? If students join in, it is often the same few students who do all the talking. The rest do their best to appear inconspicuous, so they won't be called upon to speak. It can be quite a challenge to foster participation by all students in tutorials. I've tried a variety of techniques, with more or less success. Some of the better ones are described below.

For the tutor, the hardest part of using techniques that foster participation is relinquishing control and trusting students to keep on track without constant supervision. In the usual procedure of having a discussion with the full group, the tutor can monitor every student. When the students are working in small groups, this is impossible.

I don't mark students according to how much they participate on their own initiative, since this discriminates against certain personality types and ethnic groups. Rather, I treat it as *my* responsibility to ensure participation, using techniques such as those below. The tutorial participation mark then is based on attendance, which thus represents participation.

No single method is most appropriate for all groups, topics and purposes. I keep experimenting to see what works. I always explain why I'm proposing to use a particular technique and ask students to at least give it a fair go. Even if they decide they don't like it, at least they will have experienced it.

Brainstorm

The basic idea here is to get as many ideas from a group of people as possible in a short period, without criticisms or discussion. To begin, decide on a question, such as "How can computers contribute to invasion of privacy?" Make sure everyone understands the question. Write the question on the board. Appoint a timekeeper and specify a time for the brainstorm (typically 2, 3 or 4 minutes). Appoint one or two scribes to write answers on the board. There is one cardinal rule: no discussion during the brainstorm. My main intervention is to ask people not to comment aside from items for the brainstorm itself. I make two requests: people should make their contributions as concise as possible (to make life easier for the scribes) and to wait for the scribe to finish writing down one contribution before yelling out another. After making sure that everyone understands the cardinal rule and the two requests, I ask the timekeeper to start when ready (sometimes people want to think about the topic for awhile before starting). Then people yell out answers and the scribes write them down. There will be bursts of action and periods of silence. If time is up and responses are still coming, the time can be extended.

You may want to start with a practice brainstorm to loosen people up, with a question such as "How many uses are there for a brick?"

The next stage of a brainstorm is to use the results. *Clarification* is an essential next step. Simply go through each item on the board (I usually have a student read them out), and if anyone has a question about what the item *means*, they should ask. (Disagreements or comments are not appropriate at this step). If the items are straightforward, this need take

they undertake a series of exercises with me to help overcome some of the problems identified.

Too often, a university can present an impersonal face to students, particularly to first years. Availability to students is therefore also a critical part of my teaching practice. I make it very clear to students that they should feel free to contact me about any problems they may be facing. I post on my office door times when I will be available in the office for consultation. Those who find the hours inconvenient (like part-time students) can make an appointment to see me at any other mutually convenient time.

Research and teaching

The link between research and teaching is an important one, especially at upper level. As far as possible, I believe that 300 level subjects in particular should reflect the current research interests of the subject co-ordinator. Students at 300 level benefit from subjects based on the cutting edge of research and, if the aims and objectives outlined earlier in this article have been realised, they should be ready for the more sophisticated analysis of material that teaching a subject based on current research demands. Within the broader academic community, subjects based on the research interests of members of the Department also establish a specialist reputation for the Department which in turn attracts postgraduate students.

I have also found that teaching such subjects also acts as a spur for one's own research. More importantly, I found that it nudged me into writing up more of my own work, a process that is too often shelved in the post-Dawkins university environment where other pressing deadlines tend to push one's own research and writing well and truly onto the back burner.

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GRADUATE HOUSE

The Graduate Faculty...addressing the needs of postgraduates from an academic point of view...is keenly aware of the unique difficulties faced by postgraduate students. To alleviate these difficulties a house at 49 Northfields Ave to be known as Graduate House has been provided for postgraduate student use.

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Regular lunch-time seminars are a popular activity with postgraduates and staff. Topics on offer this session have been: •Thesis Writing •Presentation Skills Supervision •Intellectual Property •EEO workshop •Basic Computer Literacy •Interview and C.V. writing strategies for Postgrads •English Conversation Groups.

Graduate House has:

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Opening hours: 9.30 am to 7.30 pm Monday to Thursday
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only a second or two per item. If anyone queries an item, the person who put it up (called it out) should explain.

Straw vote
You can use this when getting the group to make a choice between several alternatives, such as what questions will be used in a questionnaire being developed for use by the whole class. Often the choices have been listed on the board during a brainstorm. Each person has 1, 2 or 3 (or more as desired) votes. A regular vote is held, with totals being indicated next to each alternative—but this vote is non-binding. With the agreement of the group, items with no or few votes can be deleted, and items with large votes are retained. But agreement is necessary. Anyone may argue strongly for or against a particular item, and sometimes consensus can be attained (simply ask if anyone disagrees with a particular thing). After making changes that are agreed to (such as amalgamating similar items, deleting some, changing wording, etc.), another straw vote can be held with the remaining items to further narrow the field to the desired number of finalists.

Small groups
Breaking into groups of 3, 4 or 5 students is an effective technique to maximise participation and to encourage those who are reluctant to speak in front of the whole group. First, the task needs to be explained (written on the board, perhaps) and any questions about it answered. Then I ask the students to number off. Numbering off breaks the students up differently from their usual friends. With 15 students, for example, to get 3 groups ask them to number off by 3s (1,2,3,1,2,3, etc.); to get 4 groups they number off by 4s; to get 5 groups they number off by 5s; etc. Then I point out the table or portion of the room for each group. Each group then works on the task, and typically there is time to report back afterwards.

Speaking in pairs
Get the students into pairs by numbering off or by asking them to pick someone they don't already know. Nominate one person in each pair as A and one as B. I carefully explain the procedure before beginning. I pose a question from the readings, and make sure that everyone understands the question. Then, when I say "start," all As speak for one minute (simultaneously), answering the question. Bs listen only. *The most important point is that the Bs do not speak during the turn for As.* (During the exercise, some individuals may have to be asked to observe this rule in order to give their partner fair

treatment.) Then I shout "switch" to reverse the process: the Bs speak for one minute while the As listen. After the second minute, I shout that the time's up, and each pair can discuss the topic for an additional minute or so. Then on to the next question. I usually use a total of 5 questions in a session. I usually have Bs go first on alternate questions.
The first time this exercise is used with a class, a warm-up round with the theme "Tell about yourself" is a good icebreaker.
Tell students that if they run out of things to say, they can just pause until they think of something. Silence is okay. A minute is a long time to speak! They should treat the question broadly, thinking of related matters. One other suggestion for speakers: keep the volume down so as not to disturb others too much.
This exercise is excellent for allowing students to speak for a minute without interruption—something that few students have an opportunity to do in a full tutorial discussion, unless they are quite articulate.

Discussion
Sometimes a balanced and informative discussion results simply by asking for comments from anyone that wants to offer them. In many cases, though, it is hard to generate such a discussion: one or two people dominate, some never speak, the focus wanders, etc. There are several techniques worth trying.
• Go around the room, having each person comment on the topic, assigned reading or whatever. [promotes participation]
• Give each person one or two toothpicks. Each time a person speaks, they relinquish one toothpick. Those without remaining toothpicks cannot speak. [promotes participation]
• A person can only introduce their own ideas after they have summarised the point made by the previous speaker, to the previous speaker's satisfaction. [promotes listening]
• Have a student write key points from the discussion on the board, as the discussion proceeds. [focuses attention on content]
• Ask two or three students to be silent through the discussion, and then give them an opportunity to summarise the discussion at the end. [focuses attention on content]

Debate
This could be on any relevant topic. For illustrative purposes here, I use the concept of ownership. Divide the class into 4 groups: one group of 2 or 3 (the judges) and 3 equal larger groups. There are 3 sides to the debate, namely:

(a) corporate producers should own information;

(b) information should be free—no ownership allowed;

(c) governments should own information.

Each group has 30 minutes to prepare its case and to brief 3 speakers. The judges spend this time working out their criteria for assessment. The debate then has several stages:

(1) initial statement of case (90 seconds each—first speaker);

(2) refutation of contrary positions (90 seconds each—second speaker);

(3) summation (60 seconds—third speaker).

The judges then pass one or more judgements (eg. on the best argued case, the most persuasive case, etc.). I do not act as a judge, but serve as a resource person to all groups (and judges). *60 minutes*

'Library' exercise

Here I give a question for small groups of 4: "How can I find out about (for example) computers and health?" The aim here is to elicit various techniques such as looking up books and journal articles in the library, talking to experts, reading the newspapers, writing to knowledgeable people, using data bases, etc. Each group has 10 minutes to come up with a list, and each group writes its findings on the board. Afterwards I ask for comments and also comment if necessary on the strengths and weaknesses of methods proposed. *30 minutes*

Exercises on a concept

(For illustrative purposes I'll use the concept of ownership for the following exercises). Ask each individual to write down how the concept of ownership applies to computers in their lives. For example, personal computers (they own them, or use those belonging to others); library computers (the university, and indirectly the government, owns them); computers at BHP (BHP owns them). Ask for volunteers to describe some of what they've written down. *20 minutes*

Break into groups of 4. Each group collects together ideas and information on who owns computers, and then classifies this into types of ownership (eg. individual, corporate, government). Afterwards, each group reports on its classification. *40 minutes*

Quiz exercise

Break into four groups. Each group develops quiz questions about the week's reading. Start with 3 questions each; when ready, each group in turn asks one question; the others try to answer. A group is 'successful' if at least one other group can answer the question and one other group can't answer the question (ie. hard but not too hard). Continue with more preparation of more questions when the first set is exhausted. *60 minutes*

Interview practice

A set of interview questions is useful here.

For interview practice, I use two techniques of role-playing. First is the hassle line. The students stand in two lines, paired off. I explain the procedure carefully before starting. The students in one line role-play a person from the group being interviewed (eg. dentists). The students in the second line role-play themselves. The students in the second line are seeking to obtain an interview by phone. When everyone understands what's to happen, I say go. Every pair at once begins the role-play. I yell stop after 30 to 60 seconds, whenever seems appropriate. Then I ask for comments on effective technique, asking the first line students first. After comments, I shift one line by one person (ie. send a person from one end to the other end and everyone else moves down one person). Then there is another role-play, but with the roles reversed, so everyone has a chance to role-play asking for an interview. If there are an odd number of students, I pair up with the odd person. Students should be invited to participate, but offered the opportunity not to. I usually explain that the technique of role-playing is used both by corporate executives and social action groups. *30 minutes*

The next role-play is of an actual interview. In this role-play, two students role-play interviewers, and two students role-play the person interviewed and someone who happens to be in the same office. (Pick someone confident and sensible to be the person interviewed.) I send these four students outside the classroom to prepare themselves, and then ask different groups of the remaining students to look for different things:

(a) the content of the interaction: information transmitted;

(b) body language;

(c) the patterns of interaction (who talks to whom).

Then the four students are brought in and the role-play begins. Afterwards, the debriefing includes various students commenting on the role-play, in this order:

* the person interviewed, then the person in the same office;

* the interviewers;

* the various observing groups.

If desired, a second such role-play can be run, with a

more difficult situation (eg. the interviewed person privately briefed to be impatient or reluctant at first). *40 minutes*

Students respond best to techniques when they are closely linked to the purpose of the class. If the purpose is to discuss key issues in a reading, then a brainstorm of key issues followed by an exercise for small groups can work well, whereas a straw vote may not make much sense. Similarly, interview practice is appropriate if the students are expected to do interviews, but otherwise a role-play of some other situation would be more appropriate. Fitting the task to the purpose sounds obvious, but it isn't always easy to get right at first.

I've enjoyed trying out these techniques, and in most cases the students seem to enjoy them too. When they do, they seem to learn much more easily. I would be pleased to hear from others about experiences with these and other techniques for increasing participation in tutorials.

Dr Brian Martin is a senior lecturer in the Department of Science and Technology Studies at the University of Wollongong

Editor's note: teaching staff who would like to increase student involvement in their tutorials are invited to approach the Centre for Staff Development for suggestions and guidance.

Library services (vertical text, right margin)

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S 540.706/1 Journal of Chemical Education
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S 621.0705/1 International Journal of Mechanical Engineering Education
S 621.305/27 IEEE Transactions on Education
S 657/372 Journal of Accounting Education
S 850.7/2 Italica: Bulletin of the American Association of Teachers of Italian

Mary Day takes issue with use of student surveys as evidence in the evaluation of teaching, as elaborated by John Panter and Sylvia Huntley-Moore in the last issue of Overview. A response from the authors of the article on teaching evaluations follows.

Teaching Evaluations & The Tyranny of Numbers

Mary Day

I read with interest, and some concern, the article by Sylvia Huntley-Moore and John Panter in the first issue of Overview: "Evaluating Teaching at the University of Wollongong" (Vol. 1. No. 1, 1993). The authors were careful to point out differences between 'diagnostic' and 'assessment' evaluations, with only the latter evaluations to be used in promotion or appraisal processes. The use of the 'assessment' evaluations as evidence of teaching quality, not only in promotion or appraisal processes, but also in academic staff selection committees, is the issue I wish to address here.

I am meant to be reassured, I think, by the comment that "the research base on which good schemes of evaluation are developed is vast" (p 17). However, this does nothing to allay my concern about the methodological assumptions, in not only evaluation survey instruments, but also in this vast body of research. By methodological assumptions I am referring to the ontological and epistemological assumptions implied by their construction and use.

Various assumptions about reality exist. These range from an assumption that we, as thinking, feeling, sensing people, operating within particular social settings, construct our reality, to an assumption that reality exists "out there". Similarly, various assumptions exist about what it is that is valid knowledge. One assumption about valid knowledge is that it is constructed through the social interaction of particular human beings, in specific places at particular times. A quite different assumption about what constitutes valid knowledge is that knowledge is only valid, perhaps "discovered", when it is evidenced by a large number of observations supported by a barrage of statistical tests. I believe that the use of 'assessment evaluations' in this University are based on particular methodological assumptions encompassing reality existing "out there' and measurable only through a number of observations.

I do not see this as a problem, necessarily. However, I do see this as a problem, when the methodological assumptions made about what it is to teach, are substantially different. Of course, we all know what it is to teach, because we all do it, right? But this presupposes that we all have the same ideas about what teaching is all about. And I know that this is not the case, even within the Department of Accountancy. For example, there is a vast body of literature on constructivist pedagogy. The basic assumptions in much of this literature is that both reality and knowledge are constructed by particular learning communities. Similarly, there is a vast literature on critical pedagogy. In much of this literature, the focus is on teachers being students and students being teachers, with an explicit aim of transformation and emancipation for all parties. Although the methodological assumptions vary within this literature, certainly some assumptions are focussed on the social construction of both knowledge and reality.