

Little Leaps...

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Learning and Teaching Support

Arguments Get a Tutorial Going

Dr Chris Mortensen
Department of Philosophy

Introduction

The perennial question in philosophy might for some be the problem of induction or the mind/body problem, but for most philosophers teaching at university, as for most lecturers no matter what their subject matter, the really hard question is this:

How do I get all my students to prepare for and participate fully in the tutorials?

with the corollary:

How do I get the really talkative students to talk less?

Here is one effort, so far very successful, at answering these questions.

In Argument and Critical Thinking, a first year Philosophy subject that aims to help students to learn the general skills and strategies of the critical evaluation of arguments, we have developed a tutorial system that gets everybody talking.

Description

Tutorial attendance forms part of the grade and a roll is taken at the beginning of each tutorial. All the students are asked to prepare short answers on 8-12 questions contained on a tutorial sheet. The tutors ask two or more students consecutively to answer one of those questions. If the answers diverge, they are asked to explain or argue about the difference, with other students entering the fray if they feel inclined. This divergence is likely as the questions are designed such that several answers may be plausible. The tutorial proceeds in this way through all the questions and all the students.

About 15 minutes from the end the second part of the process is initiated. The large group is divided into 2 - 4 smaller groups of 3 - 4 students to tackle an argument leading to a conclusion on a controversial issue (for example "All the perceived differences in learning are due to nature not nurture") also set on the tutorial sheet. The student groups are given 8 minutes to come to a consensus answer. One student is nominated to as a representative of each group and reports the group finding. Differences in the answers provided by the 3 groups then becomes grist to the mill of a spirited debate over the last 5 minutes or so.

By the middle of the semester the quieter students (often the women) are more vocal, and the talkative students (often the men) are better at sharing the air time.

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Debating in Geochemistry III

Dr Yvonne Bone

Department of Geology and Geophysics

There are only a few hours for practical work for this section of the course. There is fair amount of material, and I wanted students to get involved, so I tried a debating model that ultimately proved to be very successful.

I begin by telling the class that we are going to divide into 4 groups of 5, and debate some controversial geochemical topics. The students self select their groups. Then each group nominates two people to speak for the affirmative and two to speak against, and who will be the MC/arbitrator/conclusion discussion leader for the topic. The topics are:

- 1: Proterozoic primary fluid inclusions give trustworthy data.
- 2: Calcretes are significant in the rock record.
- 3: Groundwater is a reliable geochemical exploration pathfinder.
- 4: Tourism and cave preservation are incompatible.

Only one group per topic is allowed, so as soon as the students have made their decision they print their names underneath the topic on a form on the wall. The next week we hold the debates. Each speaker has 3 minutes, starting with the affirmative side. The MC then does the wrap-up for a further 5 minutes. Assessment may be partially or wholly peer driven. I use an assessment sheet, which allows the class to allocate marks for (a) content and (b) presentation, including for the MC.

I make myself available to each group for 20 minutes, in my room, for help with references for the topics.

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Sex, Practicals and Video Tape

Jane Copeland
Student Support Services

The Department of Civil and Environmental Engineering, in collaboration with the Equal Opportunity Office undertook a study of gender dynamics in laboratory classes. Much of the descriptive data was generated through the use of video. Analysing this footage produced some real surprises.

The study initially focused on gender issues, but in watching the tapes the researchers discovered a number of other glaring teaching and learning problems of which they weren't previously aware. These included students who were constantly passive and uninvolved, students who were bored, and demonstrators giving explanations the students didn't understand. Demonstrators were sometimes too focused on managing the equipment and the experiment to be aware of these issues, of which the department might have remained unaware if not for the serendipitous video. The clip below shows a student waving his hand over his head, indicating that the demonstrator's explanation "went right over his head".

Viewing video footage of the teacher-student interaction can be a very good way of uncovering hitherto unnoticed teaching and learning issues.



[That went over my head 1.8MB](#)

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Perio Pickup

Dr Robert Hirsch
Faculty of Dentistry

What It Is

A game for fourth & fifth year undergraduate dental students which focusses on academic and clinical knowledge in Periodontics (the part of dentistry dealing with the gums and gum diseases).

Why I Did It

When the first wave of DIY computer-aided learning authoring packages became available, I spent many hours writing an interactive program relating to sharpening periodontal instruments. The final product worked OK, but I noticed that students tired of it/ lost concentration after a few minutes. They didn't learn much from it either, as experience in the clinic was to show.

I came to the conclusion that there can be something very isolating and 'soul destroying' about sitting in front of a computer terminal learning something and that unless the program is extremely rivetting and slickly produced, students will quickly turn off & wish they were somewhere else. One of the problems we face, I believe, is that we are surrounded by so many highly professional and clever information packages (TV & computer) that any products that look even slightly 'home made' will be rejected as having little inherent value.

How It Works

My next foray into an alternative/ different form of teaching came during a short period of study leave. I developed a game called Perio Pickup (modelled on Trivial Pursuit). This could be played by a group of up to 6 students and consisted of question sheets (suggested answers on the back) and a reward system for correct answers. Questions came in 6 categories of clinical & academic Periodontics and the idea was to correctly answer a question in each category to win the game. The questions were clinically relevant and included photographs of specific cases.

What Students Thought

The response from students was very favourable. Here learning occurred in an interactive social environment, rather than an interactive but more sterile user-computer environment. I think this made all the difference with regard to learning. Other advantages were that the tutor could participate at different levels. For example, you could sit in the corner and observe the level of knowledge displayed by each player as their turn came around. Or, you could use an individual question to launch off on a mini tutorial about that particular condition or treatment plan; indeed some playing sessions involved discussion about only 1 or 2 questions.

The questions have also been used to help students who are struggling academically and who have difficulty in final exam technique, particularly since the style of questions in PerioPickup are being increasingly used as exam questions by the Department.

Comments

Although the game was very time consuming to make, it is probably less so than the average

CAL program. I believe the issue of high quality finish is not as important with the hard copy teaching tool as it is with computer generated or video products.

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Posting Posters Promotes Pedagogy

Mike Sandiford et al
Geology and Geophysics

What It Is

In the Department of Geology and Geophysics Mike Sandiford, Ross Both, John Foden, Vic Gostin and Brian McGowran have developed poster components for some of their courses.

"Posters encourage independent research, they have as much to do with self-education as with teaching", comments Ross Both.

Why We Did It

Poster sessions are nowadays an integral part of many academic conferences, across a wide variety of disciplines.

Recently posters have been used in teaching as a way of providing a refreshing change from standard essays, while at the same time requiring a similar rigour in research and organisation of ideas.

How It Works

The main ingredients in successful poster design are a cogent, well connected argument that can be clearly expressed in point form, and accompanying illustrations/photos providing relevant support.

How to start: Pick topics that have a strong visual component. Students may develop their own ideas from those given.

Give specifications on poster size and presentation. The reference at the end of this article has excellent suggestions. This reference, or any similar one, may also provide students with the background reading they need to understand the expectations of this new format.

The poster session: At the poster session students, staff and invited guests can circulate around a large room and question the presenters. Typically the class is divided in two, with half the students presenting and the other half viewing, swapping after a set time (perhaps 45 minutes).

Suggestions for discussion during the poster session could include (from Kemp and Clark, 1992):

- Briefly explain what you have tried to show in your poster.
- How are these ideas significant to Geology?
- Are there any common misconceptions about this topic?
- Please explain the technical words that you have included in your poster.

What Students Thought

Posters are a superb resource for educators, especially those in a highly visual area such as geology and geophysics. Students enjoy doing them, and at the same time develop skills in presentation and argument essential to their post university professional work.

Reference Kemp, K.M. and Clark, J.A. (1992). Teaching Geology Using Poster Assignments, *Journal of Geological Education*, v.40, pp 398-403.

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It's a Puzzle

Dr Deane Fergie
Department of Anthropology



Introduction

For beginning students it can be hard to understand the process of analysis. In Anthropology, where I teach, the need to appreciate analysis and to extend on previous analyses is paramount. I have been using a simple child's puzzle as a teaching aid and found it to be very effective. Not any puzzle would make this possible. The Designer One, by Jigsaw Toy Factory, has the appropriate characteristics; it has defined structural features such that there is no single solution, but there are finite possibilities.

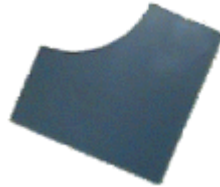
Description

Begin with small groups that describe the puzzle. This uncovers differences at the level of description, an important concept in Anthropology (and the Arts and Sciences generally). Some students may not even use the term puzzle in their description. They are bound by the nature of the task to begin with folk concepts.

Conceptualisation

Start an analysis, focussing initially on concepts and categories of description, such as shape

and colour. We begin here to discuss the differences between folk and analytic concepts - 'is that blue, green, or turquoise, or does it need a specific name?'; and cases where there is no folk concept, but where we need the analytic concept - 'what is that unusual shape to be called?'. Comparisons between puzzles in terms of shape and colour reveal differences and similarities, constraints in size, types of triangles etc. in use and so on.



Analysis

Depending on earlier work we might take the direction of re-introducing colour and examine aesthetics. Then other possibilities can be pursued, such as; what purpose does the puzzle serve - what is the purpose economically for the manufacturer, pragmatically for different end users, - or - how does it fit in with the purposes of the economy it is situated in, what techniques of production and technology does it presuppose?

Critical analysis

We can start to critique our previous analysis to change the paradigm we are using. For instance, we may uncover that a focus on size and colour ignores depth or the frame may be seen as a different order of analysis, as it is static while the rest is in process.

Self-reflection or further analysis

Finally, we can examine our purpose and the purpose of analysis. It wasn't so much to understand the puzzle as to understand our perception and construction of the puzzle. We were learning about us.

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Student-led tutorials

Dr David Mosler
Department of History

"I thought this approach would remove the major intimidating agent, the tutor, and so free the students to talk amongst themselves. Each student would have to engage in their own work and also help to create a social and intellectual climate."

Background

As resources become more constricted and teaching loads increase we need to develop new strategies. Traditional tutorials are not only time consuming, they are often ineffective, in that only the student giving the paper is actively involved. Additionally, average students are intimidated by the better students, and of course, the tutor. This project is an attempt to come to grips with all of these issues; the constriction of teaching resources, the lack of active participation by students and the tendency for the average students to minimise their participation.

Aims

- to create a tutorial program that is resource efficient
- to offer a more collegial environment than the traditional Humanities tutorial

Process

I begin by dividing the class into twelve. A Convenor, elected by the group, does the organising of the tutorial meetings and interactions with the lecturer. Two Presenters are selected by the group and give an oral presentation of findings at the end of the semester. The rest of the group are Researchers, who produce 800-1000 words each on a sub-section of the main topic. They meet once per week, with the lecturer in charge rotating between groups (5 minutes with each group) each week discussing problems and interpretations. The groups divide topics into sub-topics, and a considerable amount of discussion takes place, trying to make sure the research is focussed - questions are important, and typically students get very little experience with this essential phase of the academic task. These groups have to come to grips with the difficulties in arriving at the right research questions. In my course Modern America, examples of topics in 1997 Semester 1 would be: Anarchists, Robber-Barons, Native Americans, Black Americans, and Migration. Assessment - The Convenor is assessed on the total presentation, Presenters are assessed on their presentation, and Researchers are assessed on the individual sections they write. As every member of the group is dependent on the others, and without the presence of the authority of the tutor or lecturer, these groups create an intellectual climate that is sorely lacking in most traditional tutorials.

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Student led tutorials using the 'supertut' process

Dr Jocelyn Davies

Applied and Molecular Ecology

"Of course I wanted the students to contribute to informed debate, but I also wanted them to argue freely about controversial issues without feeling threatened . . ."

Description

In the 3rd year subject Indigenous Australians and Environmental Management students encounter a host of 'wicked problems' - problems where there is no 'right answer' because the formulation of the 'problem' and of responses to it vary according to people's social, cultural and political experiences and attitudes.

Tutorials can be an important way of exploring different ideas and opinions about such issues provided a supportive learning environment and a high level of informed participation can be achieved. However, this promise is more often than not left unrealised, so I decided to work with student-led tutorials and 'supertutes' - (pre-tutorial workshops attended by the tutorial leaders for that particular topic) as a way of encouraging students to prepare for tutorials and participate in discussions.

The weekly tutorials which resulted were lively and interesting debates with high levels of participation from all tutorial group members. Most of the student tutorial leaders also displayed a high standard of expertise in their chosen topic.

Aims

- to encourage independent learning
- to provide a non-threatening atmosphere where discussions can be frank and open
- to promote skills and confidence relevant to facilitating meetings and workshops
- to develop skills in formulating arguments and justifying a position
- to engage all students in tutorial discussions

Process

Students leading a tutorial worked in pairs to design a tutorial and this formed part of their assessment. Their task was to facilitate informed and balanced discussions. This placed responsibility on them for their own learning, and for creating a learning environment for their fellow students. By week 3 of the semester, each self-selected pair of students was required to choose a topic from a list of 5 tutorial themes which spanned most of the content of the subject. Lectures on each theme, which were scheduled for the week prior to the tutorial, and a booklet of readings, provided background for students and raised points for discussion.

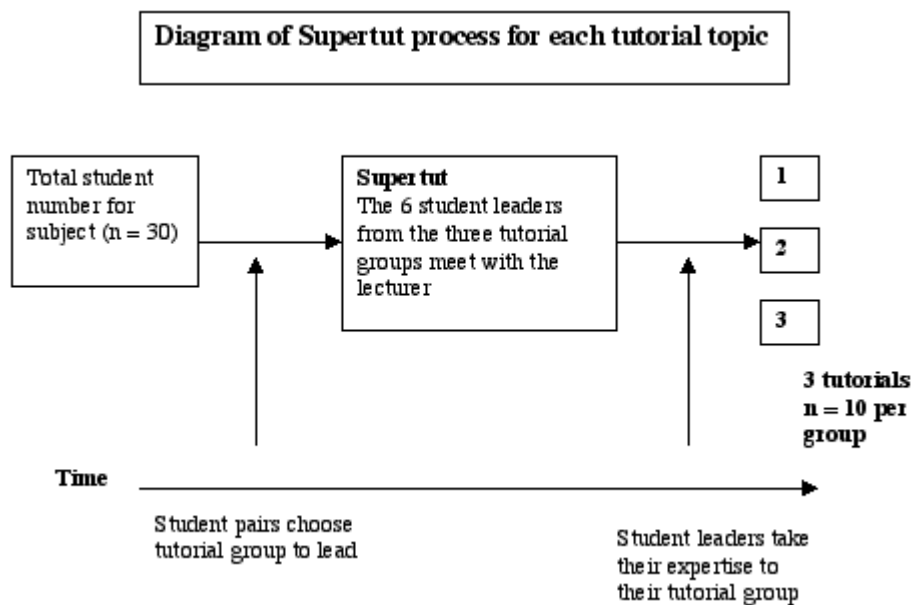
Teaching early in the semester included some skills development - by Margaret Cargill of the (former) Advisory Centre for University Education - on formulating arguable propositions and developing an argument. A brief outline of some facilitation techniques was also presented.

As a group the class discussed features of a good tutorial as a basis for establishing assessment criteria for the student led tutorials. Good tutorials were seen as having well informed leaders, interesting ideas and presentations and lively discussions with everyone participating. In addition, 'loud-mouthed' or highly opinionated people were not allowed to dominate.

Supertutes

I drew on Richard Baker's experience at Australian National University in designing the student-led tutorial process. From his experience of sitting through six tutorials each week on the same topic, Richard developed the idea of supertutes (he spells it 'supertuts'). (see [his site](#) for an excellent account of the supertut process and the results of evaluations through questionnaires and a focus group.)

Leaders, having prepared for their task, met with me for two hours, one week prior to leading their tutorial. These supertuts involved six students (a pair of tutorial leaders from each of the three tutorial groups). These students and I aired their ideas about their topic, listened and commented on other students' ideas and talked about sources of further information and ways to structure the tutorial discussion. Student tutorial leaders were then required to brief their group members (by e-mail) on the exact topic for discussions and on the preparation that they should complete before the tutorial.



Tutorials

Students used a variety of facilitation techniques. Most tutorials were structured into several parts - an introduction to the topic from the leaders; an ice-breaker discussion question; a more involved debate; and a summing up by the leaders. Scenarios based on role playing provided some of the most animated discussions. In several other tutorials, student leaders divided the group into two parts and asked each sub-group to develop an argument either in support or against a provocatively framed question. Some leaders swapped the allegiance of the two sub-groups half way through the tutorial, helping to challenge and critique strongly held views. A few tutorials were more technical explorations of the information presented in readings. As well as informed and sometimes intense discussion, a lot of fun was had by all in most of the tutorials, and the trepidation with which some leaders approached their task initially was usually quickly dispelled once the process got underway.

Assessment

Leaders were assessed on their collective performance by all members of their group and by me through completing a 'pink sheet'. Marking criteria included the extent of preparation; clarity of instructions given to other group members about preparation; clarity of explanation of issues; choice of methods to stimulate discussion; encouragement of discussion; balancing of input by members of the group; maintaining a rapport with the group; time management and use of visual and other aids. The two leaders of each tutorial were also asked to assess the extent of their respective contributions to preparing and facilitating the tutorial. They could ask to have their individual marks varied if their contributions were unequal and this happened in a few cases.

Tutorial facilitation contributed 10% to subject assessment. Students also had to write a tutorial paper on the same or a similar topic, due two weeks after the tutorial they led (and was worth a further 25% of the subject's assessment).