Small Group Teaching

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1. Student perspectives on small group work in the Faculty of Science from the Student Course Experience Questionnaire
2. Some suggestions for structuring small group activities
3. Some Suggestions about ways of asking questions in small group situations
4. Some suggestions for structuring presentations in small group situations

Student Course Experience Questionnaire
Faculty of Science: 2002 Undergraduate Students

<table>
<thead>
<tr>
<th>Good Teaching Questions</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3 The teaching staff normally give me helpful feedback on how I am going</td>
<td>42%</td>
<td>30%</td>
</tr>
<tr>
<td>Q8 The teaching staff of this degree course motivate me to do my best work</td>
<td>44%</td>
<td>19%</td>
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<tr>
<td>Q16 The staff make a real effort to understand difficulties I may be having with my work</td>
<td>32%</td>
<td>28%</td>
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<tr>
<td>Q19 My lecturers are extremely good at explaining things</td>
<td>46%</td>
<td>17%</td>
</tr>
<tr>
<td>Q27 The staff put a lot of time into commenting on my work</td>
<td>14%</td>
<td>53%</td>
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2001 Student Course Experience Questionnaire
Science - Undergraduate Students

Q37. What are the best aspects of your degree course? Please explain why these are good. (3 times as many positive comments compared negative comments)

Group work with my peers and problem based learning/tutorial approach to some of the subjects in the course has given me motivation and ability to integrate my learning.
I specially enjoy the labs in the course which mostly compliment the week's course material and are great way of learning with science fun.
The group work allows you to get to know other people and learn team skills. You also have the opportunity to do individual work so it is a good balance. The best aspects are working in teams and able to learn a lot more with other students. Every different student has a different understanding and ideas that support the increase of knowledge and skills for other students.

Q38. What aspects of your degree course could be improved? Please explain why.

Less group work. Although I feel it helps build other interpersonal and relational skills it has been somewhat of a detriment to grades as other members are far less capable, which drags a HD student to a pass grade.
So far I am very satisfied with all aspects of the course outline. But perhaps if we could have more time to have some group discussions would be better.
No safety nets for groups not working well meant learning suffered relatively significantly and frustration, demotivation, etc.

Aims of Small Group Teaching

- engage with material at levels which has personal meaning:
  - practice thinking
  - practice problem solving
  - see connections
  - see relevance
- help develop attitudes and values
- practice oral and communication skills
- helping students engage and socialise
Ways of Structuring Group Discussion

**Introductions**

**Contracting**

**Buzz Groups**
- Pairs of students
- 2-3 Minutes every 20 minutes
- Tasks
  - review preceding section of lecture
  - apply knowledge from preceding section
  - develop questions about the lecture
  - prepare way for next section
- Tasks not right/wrong
- Tasks not ambiguous, over long

**Problem-Centred Groups**
- Groups of 3-6 (depending on architecture)
- More substantial problem or issue than for Buzz Group
- More systematic reporting back
- Tasks
  - Analysis of theory and application to problem
  - Design of experiment and analysis of data
  - Academic Skills
    - Note Taking
    - Examination Technique

**Pyramiding**
- Own -> Pairs -> Fours -> Plenary
- Different tasks at different stages
- Example
  - Own: identify forces acting on object
  - Pairs: compare lists of forces and draw force diagram
  - Fours: compare force diagrams and write down equation of motion
  - Plenary: selected groups describe force diagram and state equation of motion

**Asking Good Questions**

- **Closed-ended questions** require yes or no answers only.
  - Eg. Do you know how to save this program to your disk?

- **Open ended questions** lead to longer answers and engage the students in their learning.
  - Eg. What are you proposing to do?

- **Re- phrasing questions** attempt to clarify what is being asked.
  - Eg. Janet wants to know what formula would be a better solution for the two problems, what do you think?

- **Probing questions** request more clarification or examples.
  - Eg. How can you break that down into steps?

- **Encouraging questions** start the ball rolling for shy students.
  - Eg. What did you get stuck on?

**Preparing for and Presenting An Explanation to a Small Group**

1. **Beginning: Introduction and overview**
   - purpose and context - aims
   - overview of key points - objectives
   - revision of earlier material
   - show structure of presentation
2. **Body of presentation**
   - First key point:
     - explanation of ideas/procedures
     - use of examples of ideas/procedures
     - re-statement of first point
   - Second key point:
3. **Ending: Summary and conclusion**
   - re-statement and review of key points
   - conclusion or implications
   - details of next presentation

**Conclusion**

Students appreciate good group work and interaction with tutors and demonstrators

Need to clearly think about what you want the students to learn and how you want them to learn

Need a range of strategies and techniques (usually based on sub-grouping) to engage students in group work

Group work vitally important for the achievement of generic attributes such as communication, teamwork
**Clarity In Explanation**

**Signposts:** signal direction and structure  
e.g. "Today I want to examine four approaches to the ..."

**Frames:** delineate beginning and end subtopics  
e.g. "Let's turn now to the ..."

**Foci:** highlight and emphasise key points  
e.g. "The basic principle underlying ..."

**Links:** link sections of explanation  
e.g. "So you can see that ... related to ... in that ..."

**Delivering The Explanation**

1. Monitor speaking rate, force and pitch  
2. Try not read directly from written notes  
3. Maintain eye contact with audience  
4. Monitor posture and gestures  
5. Watch the timing  
6. Plan when and how students will be able to ask questions

**Making Small Group Classes Effective**

**Before each session**
- Remind yourself of the aims and desired learning outcomes of the subject of which the classes are part  
- Set clear objectives that relate to the aims of the subject for each session  
- Take into account the group's background knowledge, experience etc  
- Plan and time the session carefully  
- Plan alternative materials and approaches in case something doesn't work out  
- Prepare/copy handouts well ahead of time  
- Read class list and start to learn (pronunciation of) names  
- Arrive early to check room, seating, equipment, technology etc

**Beginning the first session**
- Explain the objectives for the subject/session(s), be prepared to adjust session aims in the light of the students' comments and reactions  
- Discuss (or use an icebreaking activity explaining/illustrating) your expectations of the students the students' expectations of you, the subject etc

**During each session**
- Remember (and possibly refer to) the aims  
- Engage individuals and group in theme, activity, topic right from the start  
- Vary the roles individuals will play within pairs or groups (listening, summing up at the end, leading discussion, presenting short position paper, presenting a list of questions about the reading etc)  
- Vary the direction of your questions (individuals, groups, pairs)  
- Set clear tasks  
- Use eye contact  
- Ask both closed and open ended questions  
- Be prepared for silence  
- Address students by their names as often as possible  
- Use humour appropriately  
- Keep a sharp eye on the time

**At end of each session**
- 5 minutes before the end of session  
  - close session with a summary (given by you or person responsible)  
  - thank the students  
  - remind students of the aim of the next session

**After each session**
- Evaluate: note your impression of if/how you achieved the objectives; what worked what didn't.