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ASTRONOMY & PHYSICS EDUCATION

Teaching & Learning in the School of Physics & Astronomy

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PART 4: GUIDANCE FOR DELIVERING SMALL GROUP TEACHING/TUTORING

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Content

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- PART 4A
  - The contexts you may encounter small group teaching/tutoring
- PART 4B
  - How to be an effective tutor in a small group situation.

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REMEMBER ...

The

CLASS AND LAB HEADS

are the

MOST IMPORTANT PEOPLE

for you to contact with

ANY QUESTIONS

you have about your course/allocations!

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PART 4A: Contexts

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“Supervision” sessions

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- The School runs Supervision sessions for students in levels 2 and up. The exact format and frequency varies between levels and between Physics and Astronomy, but generally …
  - Supervision sessions see staff assigned small groups of students
    - Sometimes these will be pre-split into groups of ~5-6
    - Sometimes you will be given a larger grouping and left with deciding whether to work with them en masse, or split them up into smaller groups.
  - These sessions are designed to help with student revision – they are not usually places to teach new material, rather to help reinforce material provided in lectures.
  - Scheduling usually left to the superviser.

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Tutorial sessions

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- Again, vary from level to level and class to class.
  - Can be whole class sessions or small group
  - Can be compulsory or voluntary
  - These sessions are designed to help with student revision – they are not usually places to teach new material, rather to help reinforce material provided in lectures.
  - Usually scheduled by the class/lab head.

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Work to cover in these sessions

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- Usually there will be example sheets/question sheets provided, either by class heads or lecturers.
- As staff you should have access to the worked solutions for these.
- If at all possible don't rely on those – try to find the time to work through the questions yourself.
- This will help identify
  - Mistakes in the solutions
  - Points that you think are likely to trip up students

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Structure of sessions

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- Sessions can be highly structured, utterly free-form, or indeed somewhere in between.
- Example of highly structured: set homework questions for students to attempt ahead of each session, then work through those questions at session.
  - Consider getting students to submit before the session so you can be forewarned about the areas they are getting caught out on, and focus on those in session.
- Example of utterly free-form: make no plan for the session and ask the students when they get there what they are worried about.
- The highly structured can become tedious, but you retain control and will cover work.
- The utterly free-form can lead to some great student interactions, but can also end up with nothing being covered if the students don't respond.

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PART 4B: How to be an effective tutor

Characteristics of an effective tutor

Organisation

Clarity

Knowledge and understanding

Dynamism and enthusiasm

Tutor-Individual Student Interaction

Tutor-group Interaction

How would you prioritise these characteristics?

In a moment you will be invited to join a breakout room with colleagues.

You have 10 minutes to discuss these and decide on an order:

1 = Most important
6 = Least important

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Facilitating a learning session

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- You will have to make judgements about *when*, *where* and *how* to intervene in any session.

- There are broadly 4 stages in the process of facilitating any learning session:

  1. briefing tasks,
  2. helping students solve problems,
  3. giving explanations and
  4. monitoring progress.

Adapted from Goodall and Elvidge (1999) The Teaching Assistant in the Laboratory: Developing Postgraduates' Teaching Skills in the Sciences, University of East Anglia

1. The briefing task

- Describe briefly what is to be done.
- Explain the purpose
- How much time is allowed for the activity?
- Check understanding
- What happens next?

2. Helping students solve problems

As a tutor your role in supporting students' learning will be different depending on the activity in which the students are engaged.

One of the most important responsibilities will be to help students when they get stuck or encounter a problem.

- Aim to provide sufficient support to enable the students to solve the problem themselves.
- By listening actively and choosing your questions with care you can help your students to develop their own solutions.

We'll look at the main ingredients in the process.

2. Helping students solve problems

- How to intervene
- Clarifying the problem
- Listen carefully and check your own understanding
- Looking for solutions

Remember: always give plenty of *encouragement* and *praise* for what they have achieved.

3. Giving explanations

As part of your role in supporting students' learning you will find yourself being asked questions which seem to demand an explanation.

There are different types of explanation:

- what happens (facts and interpretation)
- how it happens (description)
- why it happens (reasons).

3. Giving explanations

- The ingredients of a good explanation are:
  - clear context and purpose
  - the explanation has a logical structure
  - it is appropriate i.e. not too long or complex
  - interesting - uses examples, visual aids, personal experience.
- When you can’t give an explanation:
  - These occasions will happen – may seem a nightmare, but don’t panic!
  - Never try bluff your way out – admit your ignorance and say you’ll find an answer, or give them pointers they could use to find their own answer.

4. Monitoring progress

If students are not progressing satisfactorily you need to establish *why*.

Start by finding out what is preventing the group, or individuals within the group, from progressing satisfactorily with the task?

- Is there a lack of understanding about the required task?
- Are they disinterested or bored in the current task?
- Have they gone off at a useful tangent?
- Is the task too demanding?

4. Monitoring progress

- Supporting learning does not mean intervening only when a problem arises nor does it mean taking over completely.
- If a group appears to be getting on with a task or project perfectly well it is still important to monitor their progress from time to time.

Different questions/prompts for different purposes

- For gathering Information
  - Open questions
  - Probing questions
  - Closed questions
- To make sure you've understood
  - Clarifying questions
- To aid problem solving
  - Encouraging comparison
  - Hypothetical questions

- It can be useful to identify potentially difficult questions/concepts in advance of facilitating a session and design a handful of questions you might use to guide students to solve their own problems.

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Summary

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- You'll encounter small group teaching/tutoring in supervisions and tutorials
- The overall goal is to assist the students without doing the work for them
- Always remember to praise and encourage them
- And there WILL be times you cannot help them
  - ALWAYS admit it