How to run a tutorial session
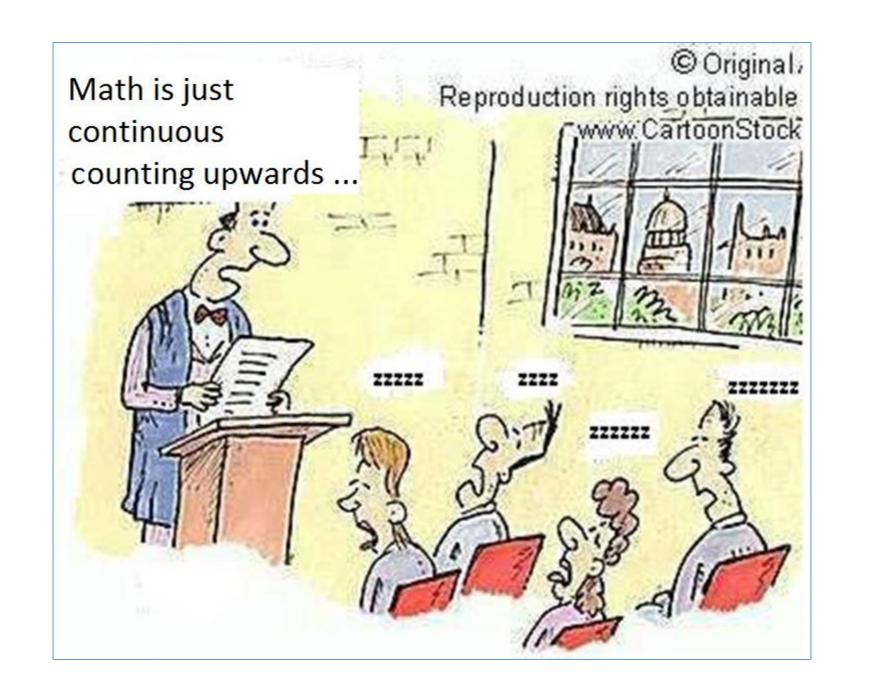
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Today we talk about:

- Why tutorials?

- Responsibilities of a tutor

- Effective tutors

- Overall tutoring strategies

- Tutoring Tactics

- Dialogue or monologue?

- Steps of a dialogue pattern in tutoring

- Example of Tutorial Dialogue Acts

- Examples of Motivational/Affective Dialogue Acts

- Important tips for tutoring

- Conclusion

If you can't explain it simply,
you don't understand it well enough.

'Albert Einstein'

Why tutorials?

➢One-on-one, face-to-face human tutoring is widely considered to be an extremely effective method of instruction.

➢It is well documented that human tutors produce more learning than classroom teaching (Cohen et al, 1982).

Responsibilities of a tutor:

- Assisting students in applying & understanding content by working through the problem sets;

- Act professionally & show keen interest in the performance of their students;

Effective Tutors

- Ability to communicate clearly and informally;
- Organized;
- Encourage group work;
- Facilitate interactive tutorials;
- Encourage participation;
- Well prepared and professional;
- Motivated and build confidence;

As a teaching assistant consider:

- Time management
- Speak loud and clear
- Help students recognize the components of problem:
✓Requirements
✓Specification
✓Limitation
✓Criteria
- Talk about practical examples
- Ask them to write their ideas on their own words and organize them on a logical order: what becomes first
- Remind students of alternative solutions
- Pay attention to students reactions by body language to get some feedback

Overall tutoring strategies

1. Collaborative solution:

❖ Tutor and student solve the problem together, step by step.

2. Discussion:

❖Tutor and student highlight the solution's main steps;

❖They review any confusions that the student may have had during the solution;

❖They consider how the solution varies when the problem statement is varied in certain ways. In short, the overall;

Tutoring Tactics

1) Should TA simply mention the steps or should ask students?
2) Should TA ask students to explain a solved problem again?

Which one you choose? Why? …

Model, Scaffold, fade

Case: Student is completely unfamiliar with the concept most students will be frustrated if you ask them in this case. He never applied the definition of Kinetic Energy before.

Tactic: modelling the step "TA defines kinetic energy and all parameters that are involved."

Case: Student has some familiarity with the concept

Tactic: Scaffolding or temporary help "TA ask student to try applying the definition of kinetic energy."

Case: Student mastered in the concept.

Tactic: It does not matter who solve the problem (Fade).

Comments on tactic selection:

➢Decision about which tactic to use depends on the level of students self-confidence and the affecting factors like whether the students preparation matched the content of the instruction.

➢Bad decisions will cause in boring sessions and a frustrating game.

➢Do not make your words so lengthy and complex; this will slow students learning process.

Dialogue or monologue?

Advantages of a tutorial dialogue over the tutorial monologue:

Teaching assistant

➢can detect and repair failed communication through dialogue.

➢can detect and remediate incorrect student knowledge.

➢can assess the student's level of knowledge and adding content to the gaps of student's knowledge.

Students pay attention to answer TA's question in dialogue but in monologue student's attention could be free to wander.

Steps of dialogue pattern in human tutoring

(Graesser et al, 1995)

1. The tutor poses a question or problem.

2. The student attempts to answer it.

3. The tutor provides brief evaluative feedback.

4. The tutor and student collaboratively improve the answer or solution. This can involve a moderately long dialogue.

5. The tutor ends the discussion often by asking the student if they understand and almost always getting a positive response.

- Steps 4 and 5 are the remedial part of the five-step frame.

- Learning would be hurt if steps 4 and 5 were replaced with a short lecture that told the student the correct reasoning.

- Normal classroom interaction has the first 3 steps.

5 Step dialogue example:

1. Tutor: What does a t test tell you?

2. Student: It tests whether a mean is significant.

3. Tutor: Sorta.

4. Tutor: Can it be applied to experiments with just one group, or do you need two or more groups?

Student: More than one.

Tutor: Right. Because the t test compares the means of the two groups. What does it tell you about the two means?2

Student: Whether they are significant.

Tutor: Almost. What you care about is whether one mean is really and truly higher than the other or whether the difference between them is just an accident of sampling. Does the t test tell you anything about that?

Student: Yes.

<etc.>

5. Tutor: So do you understand the t test now?

Student: Yes.

Tutor: Good. Let's go on.

Removing remedial steps:

Tutor: What does a t test tell you?

Student: It tests where a mean is significant.

Tutor: Sorta.

Tutor: The t test is useful in experiments where there are two groups, and you are interested in whether the mean of one group is really and truly higher than the other or whether the difference is just an accident of sampling. The t test looks not only at the numerical difference between the means but also at how widely or narrowly distributed the two groups are. <etc.>

Example of Tutorial Dialogue Acts

(Boyer et al, 2009)

Act	Description	Tutor and Student Example Words
Question	Questions about goals to pursue	"Where should we start?" "How do we analyse a system?"
Evaluative Question	Questions that explicitly inquire about student knowledge state or correctness or problem-solving action.	"Do you know how to perform this task?" "Is that right?"
Statement	Declarative assertion	"You need a closing bracket there."
Grounding	Conversational Grounding	"Alright." "Okay." "Thanks."
Positive Feedback	Complete positive feedback regarding problem solving action or student knowledge state.	"This is right."
Lukewarm Feedback	Partly positive, partly negative feedback regarding student problem solving action or student knowledge state.	"Sort of" "You are close." or "Well, almost."
Negative Feedback	Negative feedback regarding student problem solving action or student knowledge state.	"No." "Actually, that won't work."

Examples of Motivational/Affective Dialogue Acts
(Boyer et al, 2008)

Act	Description	Tutor and Student Example Words
Confusion	Indicates students lack a particular piece of knowledge.	"I have no idea what to do." "I am lost."
Frustration	Explicit Expression of frustration.	"Drrr!" "This is so frustrating!"
Excitement	Explicit Expression of excitement.	"Sweet!" "Cool!"
Praise	Statement intended to emphasize a student's success. This goes beyond positive feedback, which serves as factual confirmation of correctness.	"Great job on that part!" "That's perfect."
Reassurance	Statement intended to minimize a student's failure	"That part was hard." "Don't worry about it."

Important tips for tutoring:

- Review related lecture notes
- Review related assignment and solve them or ask instructor for solution
- Discuss the material with other TAs
- **Break assignment and solutions into steps and stages**
- **Think about practical examples related to the tutorial material**
- **Think about questions that students may ask**
- Check classroom to make sure that all the necessary tools are available
- Use your previous experience as student and what you were struggling with and how you overcome it

Conclusion:

✓ Higher interactivity correlates with larger learning gains. Wood and Middleton (1975)

✓ High-competence students often learn equally well from many types of instructions, whereas low-competence students often learn better from more scaffolded instruction (Cronbach & Snow, 1977).

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Thanks ...

Any questions?