Facilitation Tips for Contextualized Lessons

TIME

Key things to keep in mind while also paying attention to the time:

- If you want the students to know how to do the problem, make sure the work is shown in some fashion and the students have time to copy it onto their lesson
- Not everyone has to finish a problem for learning to happen
- Not all problems need to be finished for learning to happen
- Keep a focus on the key objectives of the lesson
- Make sure to save yourself time to wrap up and make explicit connections

Suggestion to stay on track with time:

1. It is valuable to have a time estimate in your head for each question or set of questions you assign to the students. Methods to do this include the following:
    a. Run through the student version paying attention to where you think students might get confused or stuck and time yourself. Base your estimate on your own time plus a multiplier (I often use x5 for lower level students)
    b. Look at the instructor notes and see what time estimate the notes say it will take for each problem.
2. Prior to starting the lesson, decide on one or two problems that you can modify or cut to save time if you are running long
    a. I occasionally cut a problem completely if there are two similar problems in a lesson
    b. I occasionally turn a relatively straightforward problem into a full class discussion and just cut out the small-group work
    c. I also modify by removing some of the struggle in a problem (like helping them get started on a problem or removing some guesswork by making choices for them in questions that give them a lot of freedom.)
3. If you want to keep things moving, but time is short
    a. Don't wait for every group to finish. If one or two groups are done you can…
        i. Send a 'spy' to the finished group to seek advice
        ii. Send someone from the finished group to another group to help them
        iii. Ask someone from the finished group to put their work up on the board
            1. This method is great if there is more than one solution strategy. Then the instructor can highlight multiple strategies in the full class discussion and they are already on the board.
    b. Another area to speed things up is during the full class discussion
        i. show your own solutions (already written out) on the Doc Cam and explain them
        ii. Find a student's work that is clear and ask if you can show their work on the Doc Cam and you do the explaining
        iii. Have students put up multiple solution methods while folks are still working and then go around and highlight the key pieces about each strategy

1. You can tell students to write at least one method in their notes while you are talking
2. If time is really short, you can skip the talking all together and just tell students to write the problem solutions in their notes (before everyone is done) and wrap up the problem by just asking if they have any questions about what they see.

c. It is also valuable to assign sets of questions (example… do problems 2-4) that are connected. If students need #2 to be correct before moving on, tell groups to raise a hand when they are done with #2 and you'll check it for them and ok them to move on.
   i. When you do this, that allows you to skip the full class discussion of #2
d. When assigning problems, be clear to the students how long they have so that they stay focused on the work.
   i. Providing strategies to how to think about the problem can also help. Like "spend 30 seconds thinking about this quietly on your own, then, before you write anything down, share your thoughts with your group."
      1. Then, if people aren't talking after a minute, tell the class that they should all be sharing their ideas with their groups now.
   ii. Tell everyone that they will have 15 minutes to do problems 2 - 4 and put a timer up for students to see.
e. Do the 'Making Connections' as you go instead of at the end.
f. Assign a problem (or finish the current problem) for homework and start class with the students comparing their work in their group
   i. It is important to set a time limit on the review or it will end up taking just as long as doing the problem in class.

GROUP INTERACTIONS

<u>Key things to keep in mind while facilitating groups:</u>

- If there are more than 3 students in the group, it is very difficult to get all of the students engaged all of the time.
  - However, we often keep 4 students in a group to address possible absent students
- Groups will often default to asking the instructor rather than working together to figure things out. A key part of facilitating groups is to 'be less helpful.' (Note: Credit for that phrase goes to Dan Meyer. He is a great resource for supporting active student engagement (https://blog.mrmeyer.com/))
- Most students do not know how to work in groups. This is an outcome for the course… group work is teaching the students how to collaborate and work together to solve problems.
  - Let them know that this work will make them more employable and better at their jobs.
- I hand out a list of skills (see the 'Group Skills' table on the last page) for being a good member of a group that I refer to a lot during class (Helping, Listening, Participating,

Persuading, Questioning, Respecting, Sharing). I pulled this list from a group work rubric online my first year of teaching and I've used it ever since!

Suggestion to facilitate group work:

1. If a student in a group asks you a question
    a. Make sure they've asked others in the group first
    b. Make sure the whole group has the same question
    c. Try not to 'give it away.' Try asking a follow-up question
        i. Why did you do it that way?
        ii. Did everyone in the group use the same approach?
        iii. Where would be a good place to start?
        iv. Can you find another way to do that to make sure you are correct?
    d. The most common question is "Is this right?" and the best response to that is "Well… explain what you did"
2. If the students are working separately
    a. Walk up to the table and ask a student near you… have you checked to see if the person next to you is doing the same thing?
    b. Walk up to the table and announce 'Everyone, pause for a second and share what you are doing with each other.'
    c. Walk up and look at their work… if they all have different work ask them all to stop and share their work with the person next to them.
3. If one student is not working at all
    a. Ask the student if they are stuck. If they say yes:
        i. interrupt the person sitting next to them and ask them to explain what they are doing
        ii. Ask the student if they feel comfortable asking someone in their group for help
    b. Ask the student if they are stuck. If they say no (and they don't immediately start working):
        i. Possibly pull them aside and have a private conversation to find out what is going on
4. If one student is done and the others are working separately
    a. Ask the done student to check with another student in their group and make sure they are correct
    b. Ask the done student to help the weakest student in their group
    c. Ask the done student to put their work on the board
    d. Ask the done student to go help a student in another group that is struggling, or an entire group. (this can be tricky… don't want them to just tell the other group completely how to do it…)
    e. Ask the done student to try and figure out another way to solve the problem

Group Skills

These are positive traits for working in groups

	Criteria
1.	Helping: You worked with group members to clear up any confusion that arose.
2.	Listening: you worked with fellow group members ideas to advance your knowledge.
3.	Participating: you contributed to the successful completion of the project
4.	Persuading: you were involved in exchanging, defending, and rethinking ideas.
5.	Questioning: you were interacting, discussing, and posing questions to all members of your group.
6.	Respecting: you were encouraging and supporting the ideas and efforts of others.
7.	Sharing: you were offering ideas and reporting their findings to each other.