Principles for activity design Part II

Last month we covered some of the basics of designing activities, this month we look at activities in more detail with several suggestions from STLFs in the CWSEI. There are too many ideas here to keep them all of these in mind for each activity you create, pick a few that are relevant to you and let them help guide your development.

1) Consider your context and start to plan
   a. How many students are in your class? Will you require some accommodations for very large or very small numbers? Are there students with disabilities you need to consider?
   b. Will you have help administering the activity? How many TAs or other instructors?
   c. What is your classroom setting? Are you able to rearrange chairs and tables or are you using fixed seats in a lecture hall? Will students work in groups? How large will the groups be?
   d. What else is going on? Is it the first day of class? A day before an exam or field trip? Last day of class?
   e. Do you have existing materials (such as a lecture, lab, assignment or exam question) to base the activity on?

2) Does your activity relate to a learning goal?
   a. Concrete learning goals will guide your development (and your assessment). A good stem is "By the end of this class students should be able to…" and avoid vague verbs (like understand, learn, or know).
   b. Make sure it is an important topic if you are using class time.
   c. Is the goal clear to the students? Or is it at least clear by the end of the task?

3) Does what you are planning motivate your students?
   a. A good task is relevant to the interests of the students, has meaningful content, and is rewarding.
   b. Motivation is highly contextual. First year students need different hooks than fourth year students. If you aren't sure ask your students why the topic is (or isn't) important.
   c. What is interesting in the activity? Is it the topic? Does it relate to their lives and/or the real world? Does it relate to knowledge the students will want or will use in their job? Keep in mind the students' perceptions are more important than yours.

4) Does it connect with the student's prior thinking?
   a. Take prior knowledge into account; make consistent use of terminology; identify required knowledge to the students. Incorporate prior knowledge by asking how/why previous tasks relate to the current one.

5) Is it the appropriate level of challenge?
   a. Difficult but doable tasks are worthwhile and interesting. But tasks which are too difficult may frustrate students. Use groups to reduce the difficulty.

6) Does the activity keep short term memory limitations in mind?
   a. Be aware of cognitive overload. Students need time to process and internalize concepts. Can you provide information that is needed for the task but not an important part of the learning goal(s) in order to reduce cognitive load?
   b. Avoid using jargon and excess terms if at all possible. Experts are notorious for being very specific with language, but novices may not need it all. Choose your terms wisely.
   c. Can they prepare for the activity beforehand? Use specific readings and simple quizzes to ensure compliance.
   d. Connect to the real world and student experiences to help reduce cognitive load

7) Will the activity support long term retention?
   a. There are many tactics which support long term retention: space the information in time (over several class periods); use problems familiar to students; make students engage with the material instead of watching you engage; activate prior knowledge by linking back to previous topics; and point out existing relevant knowledge.

8) Does the activity relate to authentic expert practice (or expert thinking)?
   a. There are many ways to incorporate expert knowledge into activities: start by identifying expert practices to focus on; incorporate checking the answer/reflection for answers; include checkpoints to keep on task for challenging problems; if the task is 'big' and challenging be sure to provide sequence or scaffolding; and model expert behaviours.
   b. Include deliberate practice and metacognition (monitoring thinking) as a part of the process: always have follow-up (feedback and reflection; be sure students engage with the feedback and take the reflection seriously (see feedback below)

9) How will you check that learning occurs?
   a. Assess the learning students get from activity: take in any worksheets; include clickers questions at the end; give a short quiz; elicit student feedback;
   b. Monitor progress in real time: eavesdrop on groups during the activity (Machiavellian tip: stand with your back to groups you want to listen to and watch groups across the room, they will think your attention is elsewhere); design opportunities for monitoring the activity; include check-ups or milestones in the process; and anticipate adaptation as you go.

10) How will you get feedback to the students?
   a. Feedback should be timely.
   b. Feedback might be task-specific. Focus should be on relevant points (goals, steps involved in expert type solutions). Ideally, the feedback should also provide motivation.
   c. Feedback can: tell students how well they are doing (performance), show them how it is connects to prior knowledge, result in students knowing what to do next (e.g. how and what to improve)?

11) Does the activity ensure the students use the feedback?
   a. If we don't enforce reflection on feedback many students will not use it at all. If we spend the time to give feedback, we should make sure they use it.
   b. Consider a short written assignment asking students to assess their own errors or comment on ways they could improve next time.

12) How will you evaluate/iterate the activity?
   a. Check that it worked (evaluating the design): Was student performance sufficient by the end? Can you tell if the difficulty and cognitive load were appropriate? Are students clear on the directions of the task?
   b. Iterate the activity for the next time you offer it. Take notes on how it worked right after running the activity. Make sure you will run into the notes before you do the activity again

As always, come and visit your friendly neighbourhood STLF if you want advice, a sounding board or someone to assess the effectiveness of your activity.

Good luck!