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## Time.....Is On Our Side?

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## Time.....Is On Our Side?

Jerrid Kruse, *ISTJ Editor*

Several articles in this issue explicitly note that their approach to the activity about which they write takes extra time. They make clear there is an “easier way to do it”. Yet the authors also note how the goals they have for students are better promoted through their “slower” activity. Whenever I discuss education reform with fellow teachers, the number one constraint that consistently arises is “time”.

*“If I teach that way, I won’t have enough time to fit in my curriculum.”*

*“Inquiry just takes so much time.”*

*“There isn’t enough time in a class period to explore all students’ ideas”.*

I hear you. I agree. However, I don’t let these constraints stop me from doing what I know (and research supports) is best for my students. As teachers, we must strive to overcome the fierce institutional constraints that interfere with what is best for our students.

After all, where we spend our time is where our hearts reside. I would much rather spend my time hearing my students’ ideas, working beside them in the laboratory, and developing relationships than up in the front of the room clicking through a presentation so that I might “fit in my curriculum”.

How to better use my teaching time has been a constant quest. Allow me to humbly share some of my strategies that have helped me create more time for engaging students in more authentic learning and building deeper relationships.

### 1) Don’t reinvent the wheel.

Rather than starting from scratch to develop inquiry-based activities, start with what you have. Open a textbook to one of the step-by-step “cookbook” activities and consider what decisions the book activity makes for students that they are likely able to make on their own. Or for those willing to really push the envelope create a researchable question from the book activity. Ask students what they think the answer is and have a class discussion about how students might investigate the question. After this discussion, ask students to actually carry out the investigation. By modifying an already existing activity, you can focus your efforts on making the activity “minds-on” rather than focusing on logistical concerns (Clark, Clough & Berg, 2000).

### 2) Use “big ideas” instead of chapters.

Many of us agonize over getting the curriculum covered.

However, note the language. We “cover” all the material with little regard for student *learning* of the material. One teacher I know once proudly proclaimed that they got through the book a month early, now they could focus on application activities. What? Why have they not worked to include meaningful learning *throughout* the year?

With nearly thirty chapters in a textbook, our content has been hyper-divided into discrete packets of information. However, these packets are often divorced of context and connections that are important for robust understanding. To help students understand your curriculum, try to identify 5-10 “big ideas” that are continually being applied with various pieces of information. When students are encouraged to see how a fact fits within a “big idea”, they are likely to have gained greater insight of the big idea as well as understood how the fact relates to other ideas. For example, the big idea of matter being made out of particles can be connected to the gas laws, density, solutions, and phase changes. When our curriculum is organized around a few big ideas, we create some breathing room and flexibility to work in the instructional space that was once occupied by so many chapters to cover. Furthermore, students are far more likely to leave our science classes with a deep, robust, and long-lasting understanding of the most fundamental science ideas.

### 3) Use the book as a resource, not as a sacred text.

This point is related to number two. A textbook should not set our curriculum or our pace. Just because the textbook mentions orthogonal geometries of some molecules does not mean we must dedicate any class time to the subject. Instead, we must ask if various information or ideas will help students better grasp the “big ideas”. By leaving out science ideas that are not really fundamental, we free up time to deeply engage students in the truly fundamental science ideas, encourage students to ask questions, investigate problems, make mistakes, and learn more deeply.

### 4) Stop giving pointless homework.

I’ll be honest; this one is a pet peeve of mine. I was working with some students after school one time to help them catch up on all of their late/missing work for *other* classes. Some of the students were staying until nearly five o’clock. Now, I have no problem extending my day or the students’ day to increase their learning and success; however, the late work consisted mostly of fill-in-the-blank worksheets and even word finds. I struggle with how “find the word” leads to meaningful understanding of concepts. As teachers, we

lament not having enough time, yet we waste students' time on busy work? Perhaps if we are strapped for time, we could eliminate the time vacuum related to busy work: making copies, handing out/collecting the work, and entering a grade.

### 5) Don't grade everything.

Related to number four is our desire to grade everything. Try having students turn in a quick (2 minutes) reflective writing as they walk out the door, but don't grade it. Instead, quickly read through the students' thoughts as your next class enters. Oftentimes, I separate the responses into two piles: those who are "getting it" and those who are not. I then discard (recycle) the "getting it" pile and use the "not getting it" pile to inform the next lesson. I don't agonize over how many points to assign; I just make a quick judgment. My goal for students is not to help them earn points, but to help them *learn*. By carefully focusing on learning, I can reduce the number of hours I spend grading. Importantly, this "quick look" does not mean I neglect to give students feedback. Rather, I provide detailed feedback in class the following day and help students move their understanding forward.

### 6) Have students give feedback.

While I don't give extensive feedback on everything students do, some assignments demand more formal feedback. However, I realize I don't have the time to extensively provide that feedback to each student individually. So I take about 15-20 minutes of a class period and have students provide feedback to each other. I spend some time at the beginning of the year helping students understand how to give useful feedback and often revisit how "great job" is not very useful to someone wanting to improve. One strategy that has worked well is to have one class period give feedback to a different class period. This way, the feedback feels more private. Also, I have multiple students provide feedback on one person's work so the creator is getting more than one point of view. By having students give formative feedback, I am saving valuable time, helping my students learn to evaluate (which carries over to their own work), and helping my students improve their products before I give a summative assessment of their work. While I do work to help students understand how to give useful feedback, I also walk around the room while students comment on each other's work to encourage students to be more clear and complete in their comments.

### 7) Use routines to maximize class time.

When my students enter our classroom, there is a "bell-ringer" on the board everyday. This bell-ringer is often a question related to the upcoming discussion, a review question from previous material, or even a set of directions. Some bell-ringers I have used include:

- "In your notebook, write how you think the ground in Hawaii is different from here."
- "Explain why the hot water went on top of the cold water in yesterday's demo. Discuss your ideas with your partner."
- "Pick up the sheet by the front sink and begin working."

As you can see, the bell-ringer is versatile. What I love about the strategy is it frees up those first few minutes of class to take attendance, connect with students, reset demonstrations or replenish laboratory supplies. Yet, as I do these things my students are mentally engaged with the content. To ensure this I spend time at the beginning of the year setting and teaching my expectation that students will be on task during the bell-ringer activity. Of course, when I don't have some pressing task, I walk around reading students' writing or listening to conversations. These few minutes do not sound like much, but have been a great way to improve the way my class operates. Other routines might include: picking up lab equipment, clean up after lab, handing in assignments, going outside, etc. Any method that streamlines necessary "housekeeping" in class frees up more time for encouraging students to deeply mentally engage through asking questions, sharing ideas, and reflecting on learning.

While these suggestions are not magical steps that will have you out of the building at 3:30 every day, I know that careful consideration of instructional and plan time has allowed me to focus on what is most important to me as a teacher: my students. Instead of spending hours grading, I get to spend hours thinking of new ways to engage students. Instead of spending my contact hours chasing down homework, I spend my contact hours getting to know students by working with them. Instead of making sure I cover everything, I consider how each piece of information connects to the larger framework of big ideas. Sometimes these little shifts in how we conceptualize our work payoff with huge dividends.

I'd love to hear your time saving strategies or thoughts on how we might better overcome the constraints that keep us from being the teachers we want to be. Head over to [my blog](#)\* to leave your comments, suggestions, and questions.

### References:

- Clark, R. L., Clough, M. P. & Berg, C. A. (2000) Modifying Cookbook Labs: A Different Way of Teaching a Standard Laboratory Engages Students and Promotes Understanding. *The Science Teacher*, 67(7), 40-43.

\*<http://educatech.wordpress.com/2010/08/13/time-is-on-our-side/>