Being great

Achieving greatness is hard. That’s why there are so few great people or organizations in the world. It’s tough to keep up the motivation and self-discipline required to get there. Comfort and complacency make it attractive to settle for less. By now, most know the book *Good to Great* by Jim Collins. Jim said the enemy of ‘great’ is ‘good’. ‘Bad’ isn’t as threatening, because nobody wants ‘bad’. Avoiding ‘bad’ is actually a motivator. But plenty of people find ‘good’ to be good enough. Trouble is, after the stress passes and the pain subsides, settling for good enough is at least a little empty. There’s got to be more. The fact that such a feeling of emptiness exists is to me evidence that we were made for greatness. Our kids deserve it, and we can accomplish it.

Getting to higher rigor – viewing instruction in a hierarchical framework

Some years ago, I was a new teacher in the Los Angeles Unified School District. I taught at a high school in Watts, just north of Compton, in south central Los Angeles. My school had about 2000 students, 99% were minority, and about 95% qualified for free or reduced lunch. The school had been at or near the bottom of many performance lists across California for decades. Many people at my school worked hard, but very few were working in the same direction. Competing agendas, high turnover, a splintered vision, lack of accountability, inconsistency, and poor follow through made the place a circus.

Teachers had little support, but they weren’t held accountable either. Great teachers fought uphill against bad ones who would unravel culture by letting students to do the unthinkable without recourse. Worse yet was the teacher who made excuses for or refused to challenge their students. Students often did what they pleased, were thereby robbed of the educational experience they needed, and it wasn’t their fault. The school was a “dropout factory” as coined in Guggenheim’s *Waiting for Superman*. Approximately 150 of the 2000 students were seniors, and only about 50% of those had enough credits to be considered for attendance at most four year universities. Fewer applied. Less were accepted or enrolled. Fights, drugs, profanity, gang activity, etc. were a daily occurrence. At one low point, a riot broke out during the lunch period involving over 700 students. I watched armored LAPD officers walk across our outdoor quad with shields, helmets, and clubs. Unfortunately, I learned that my experience was not entirely unique in underperforming urban high schools around the country.

Against this backdrop, I was trying to “comprehend” teaching. When I asked my then certification program about learning how to teach, I was referred to several large textbooks. “Read this.” “Practice these.” Each was a 500 page tome of strategies and jargon written by some PhD who was much more intelligent than I. Many were theoretical, and they just said to do everything in a very long list. I came from the private sector where distilling the message into something short, sweet, and practical was key. I’m also not very smart, so I prefer the Mickey Mouse version with lots of pictures. My struggle was with where I should be putting my time to have the greatest effect. Where do I start? How do I know where to focus now? Bloom’s taxonomy was great for writing objectives and scaffolding instruction, but I needed something more holistic and concrete that incorporated all aspects of teaching. I just wanted to find myself on some continuum so I knew what to do next. I read more books. They were scholarly, but impractical. Does it have to be this complicated or abstract? I didn’t think so. Teaching is hard, but I don’t think it has to be complex. Something can be both simple and difficult. Lots of things fall into this category. Best communicated by a graphic:
That’s right. Teaching is more difficult than building a nuclear reactor, but simpler than Facebook. It takes a lot of self-discipline to do well, but I don’t think it has to be complex. As I waded through books, journals, and bad graduate coursework, I decided that it would just be best to make my own one-page teaching cheat sheet. Teaching is a bit of a hierarchy, and it really makes sense to work on some things before giving too much focus to others. Without the basics, the more advanced stuff will sit on a precarious house of cards. It was clear to me that discipline was the foundation. Here’s what I came up with:

<table>
<thead>
<tr>
<th>Complex</th>
<th>Simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Love triangles</td>
<td>DVRs</td>
</tr>
<tr>
<td>Facebook</td>
<td>Spending money</td>
</tr>
<tr>
<td>Interstellar</td>
<td>Owning a hamster</td>
</tr>
<tr>
<td>World travel</td>
<td>Teaching</td>
</tr>
<tr>
<td>Peace</td>
<td>Going to the gym</td>
</tr>
<tr>
<td>Creating a nuclear reactor</td>
<td>Clearing out your inbox</td>
</tr>
<tr>
<td>Marriage</td>
<td>Constipation</td>
</tr>
<tr>
<td>Cats</td>
<td>Spandex</td>
</tr>
<tr>
<td>Watching</td>
<td>Making cereal</td>
</tr>
<tr>
<td>Judge Judy</td>
<td>Making cereal</td>
</tr>
</tbody>
</table>

That’s right. Teaching is more difficult than building a nuclear reactor, but simpler than Facebook. It takes a lot of self-discipline to do well, but I don’t think it has to be complex. As I waded through books, journals, and bad graduate coursework, I decided that it would just be best to make my own one-page teaching cheat sheet. Teaching is a bit of a hierarchy, and it really makes sense to work on some things before giving too much focus to others. Without the basics, the more advanced stuff will sit on a precarious house of cards. It was clear to me that discipline was the foundation. Here’s what I came up with:
The Spark Model

A prioritized set of instructional behaviors which focus on academic success

- Prioritized = ~80% of all previous levels should be mastered before focusing substantial time on the next

It’s been called a lot of things, but I’ve taken to referring to it as the Spark framework for the simplicity of having it align to the name of this document and its intended purpose in driving rigorous student learning. The idea is simple. Some things need to come before others if we’re to reach the highest heights. Classroom management, lesson planning, long-term planning, and data analysis (levels 1 and 2) are the foundation. They’re admittedly unsexy, but they’re imperative. People like to jump to intrinsic investment and critical thinking when they talk about advanced teaching. Well, while I said that teaching isn’t complex, it does require self-discipline. Far too often, when results aren’t going as planned, it’s because some element of the foundation remains unmastered or skipped over. To have a truly rigorous classroom, the base has to be strong enough to support the tower. Otherwise, it’s real shaky. Excellence in Levels 1 and 2 alone can reliably get you 2 points of ACT growth per year, so the value of a great foundation can’t be overestimated. Because of their importance, it’s worth the review.

Spark level 1 – Classroom Management

It all starts with behavioral expectations. High expectations for student behavior are the foundation upon which all great instruction and rigor lies. Great classroom management means being clear, consistent, positive, and firm with tight attention to detail. You should be 99% certain of an offense before administering a consequence, so it pays to be thorough.

Clear
Clear means giving unquestionable expectations for behavior and interactions. This means providing high structure and specificity with regard to classrooms, hallway transitions, lunch, sports practices, etc. Great discipline begins with great clarity.

When you say, “Give me your attention”, that’s less clear than, “Please put all eyes on me with mouths closed in 5,4,3,2,1….”. The latter is unmistakable and achievable. That’s what you’re going for with clear expectations. Some kids
may interpret “giving you their attention” as continuing to write but not speaking. Others may not assume it means eye contact. Be precise in your language and mean exactly what you say.

Clarity is required at the classroom and campus level in order to empower students to meet expectations. Even with our well-elucidated Student Code of Conduct, clarity is still required on many dimensions. Some examples:

- When are students permitted to speak in the classroom and when are they not?
- Is hand-raising a consistent classroom expectation at the campus?
- What is the difference between “quiet” and “silent”?
- We know students shouldn’t have electronic devices visible, but should this apply in the school entryway? If no, are they allowed to use them just outside the door? Do they have to be a certain distance away?
- Can students wear their coats in the entryway?
- Can students wear their boots or other shoes on their way to a locker in the morning before AMA?
- Can students stand just outside the building with their shirts untucked?
- Can students change in to jeans right outside the building if they wanted to?
- Where are students allowed to congregate after school and where are they not allowed to do so such that the no loitering policy can be enforced?
- How far from the building do students have to be to no longer be considered loitering on school grounds?

Even rules that already exist in written form require that we define expectations beyond the listed wording in order to enforce them well. Also, when giving a consequence, be sure to mention the reason the consequence was given. Don’t assume the student knows; this is part of clarity.

Time is a great clarity item to remember when giving directions. I’m a big fan of putting a clear, ambitious but achievable time constraint on transitions or portions of class. It makes every second matter. e.g. “Please give me your eyes with mouths closed. Listen to directions before moving. I would like for everyone to silently return all desks to rows with pencils placed on the right hand side of each desk. You have 30 seconds to complete this task. Begin.”

When you make things clear, you make them empowering to those from whom you expect the follow through, and you set them up for success.

**Consistency**

**Consistency is the cornerstone of the four.** It means that you must enforce what you clearly communicate, every time, no exceptions, and without warnings. This also means you must put yourself in a position to monitor compliance with that expectation. If you give a time constraint for completing a task, have a stopwatch ready to measure it. If you ask for all eyes with mouths closed, be prepared to make eye contact with everyone in the room before speaking. If you say students must walk in a straight line silently in the hallway, don’t walk at the end of the line and trust those in the front won’t speak. Be prepared to position yourself in the middle and instruct students to stop at pre-defined intervals in order to monitor and enforce the expectation. If a student whispers to another, it should be addressed with a consequence and not a warning. Mean what you say.

Consistency also means not playing favorites. Every untucked shirt should be given the demerit no matter who the student is. Don’t let one instance of talking out of turn go and then deliver a consequence for a subsequent one. There’s never a day where you should say, “Well it’s ok just this one time…” Make sure you’re consistent with the enforcement of your expectations once they’re made clear.

Consistency in ‘no warnings’ also means not reminding students over and over to do something. One time is all that’s needed. A slippery slope example of this is hallway loitering. Don’t stand in the hallway and tell students, “Come on; let’s move along. Get to class quickly.” For one thing, it sounds like nagging, and we all get enough of that. For another, it’s effectively a warning. Students who are unaware of the expectation not to loiter (perhaps only during the first week of school!) should be given such clarity, but from there, simply give a demerit if you see them remaining in one place without...
purpose for more than about 45 seconds. No reminder is necessary. Another ‘no warning’ example might be the start of class. “Every day, you should begin your Do Now silently as soon as you enter the room.” If the Do Now has started and someone whispers to another if they can borrow a pencil, this is not the time to say, “Remember that the Do Now should be silent” without giving a consequence.

Positive
Being positive is a key to effective classroom management and discipline. Being positive on the one hand means developing authentic relationships. Know your students. Remember their names. Work to do the things that let them know you understand and care about them as a person. Holding them to a lower expectation doesn’t show you care, but greeting them personally, asking questions about and being interested in their lives, and choosing to give them your valuable time does. It takes self-discipline to practice these; they don’t always occur during the normal course of class time, and they require making the actions a priority.

In addition to relationships, positivity also means public praise, private redirection, avoiding threats, and keeping the redirections short. Let’s start with the praise.

Praise often, but keep it genuine. Generally speaking, the best bet is to use praise for strong cultural actions, brave reinforcements of discipline or support, or any form of making others better. These are the toughest for teens. Something like, “I thought it was really brave of James that he volunteered an answer, got it wrong, but then stayed with the problem and offered a more thorough second answer after he took some minutes to reflect. That action tells me he’s got the grit it takes to find success. I’d want to work with someone like that.” If used well, opportunities like these will occur more often than you might think. Be on the lookout for them and don’t miss the window. Public praise should be genuine and therefore used judiciously. If we thank every student for taking out their pencil and starting their Do Now promptly each day, it cheapens the praise for more significant cultural actions. It can also have the unintended consequence of sounding condescending or belittling to a high-schooler if the task is an easy one. Remember, it’s a judgment call, but authenticity should be the guide.

Private redirection also keeps things positive. When giving consequences, try to do so discreetly and in a way that reinforces that you still value the person. Suppose you have a student who calls out the answer without raising their hand. Clarity and consistency say that she must receive a demerit, but there’s more than one way to give it. The wrong way is to embarrass the student by telling them, “Linda, you have one demerit. I don’t know why you can’t seem to raise your hand before speaking, but it’s getting old.” Better to say, “Linda, I love you and appreciate your participation, but it’s one demerit for not raising your hand. I know you’ll remember next time, and thanks for being engaged.” Better still is if the expectation and relationship are well established, just say thanks and make a hand gesture to hold up the “1” for her to see, communicating that she’s earned the demerit. She’s likely to nod, and that’s the end of it.

The final point of positivity is avoiding threats and long lectures for behavior. While you want to be clear, generally speaking, keep the, “If you do this, you’ll get a demerit” talk to a minimum. It’s usually understood that demerits are a consequence for not following directions. Simply giving the direction without going into too much detail on the consequence makes it feel less like a threat and more like a respectful conversation to students. When you must give the consequence, make it short and sweet. Everyone, especially a teen, hates a behavior lecture. It’s far more effective to simply give the consequence with a reason and leave it at that. Save the behavior discussion for another time when they haven’t just earned a consequence. It’s plenty to say, “James, that’s one for not sitting SMART with your head on the desk. Please sit up.” It’s less effective to give the consequence and then take James aside to head down the road of, “Do I have to treat you like you’re in middle school because you won’t keep your head up? I would expect more from someone in high school. It’s not that hard. I don’t want to see this from you every day. You need to listen.” Such can sow the seeds of disrespect from James.

Firm
Teaching is not a Vegas show. There are no tickets being sold. There are no lights, no blue people, and no popcorn. Don’t make it a show by engaging in a behavioral debate with a student, and make sure you hold high expectations. Being firm means that a consequence given in the moment is not up for discussion. It doesn’t mean that you can’t discuss a
consequence privately at a later time; it just means that the time is not now. When you engage in debate or negotiation, you make it a show and lose tremendous respect from other students in the classroom. If a student is talking when they’re not supposed to, issue the consequence in a positive manner and move on. Some students will need to learn that a reaction in the moment is not the way to express disagreement. We want to teach them that it’s perfectly ok to respectfully approach teachers or staff for discussion at a later time, and students deserve logical reasoning for everything, but a negative reaction in the moment distracts from valuable learning time and only reinforces impulsiveness. If there’s a key outcome of successful discipline, it’s teaching delayed gratification. Let’s take the talking scenario.

You see a student speak to another in class during silent work time. You issue a consequence to them. They respond loudly for all to hear with, “I wasn’t even talking!” Not appropriate. The teacher who doesn’t understand firmness will engage in this debate at their peril. They might respond with, “Well who was talking then?” The most common answer will of course be, “Well I don’t know, but it wasn’t me.” This goes nowhere and only serves to weaken respect that the class may have for the teacher, making it harder to enforce expectations next time. When a student says, “I wasn’t even talking!” much better is to 1) have made the expectation clear previously that a way to respectfully express disagreement is to approach and ask after class, and 2) respond with, “Now you have a consequence (one demerit) for the tone of your response. I’m willing to discuss with you after the class is over.” You’ve given the student a clear outlet, fair logic, and a controlled, firm response. If they decide to continue, it’s a removal. If you’re consistent and fair in your firmness, such in the moment challenges will be the exception. If you aren’t, you can expect more difficulty with enforcing behavior.

Addressing misbehavior takes time and energy. When establishing clarity and consistency, it usually takes more time up front. But is this investment really worth it? I mean, it’s going to take time away from covering class material, and it’s not like there’s many days to waste. The answer is always yes. Consider the illustrative chart below to help explain the point.

I’ve simplified the world into two types of classrooms and two types of schools – each consistent or inconsistent when it comes to discipline. The consistent classroom will always take more time up front, but the payoff is exponential as the year goes by because kids are on task and no time is wasted. This effect is even greater when the entire school is consistent on discipline, because holding high expectations is less of a cultural battle. That’s why consistent discipline is always worth the investment, and team accountability is key.
There are four common pitfalls in effective classroom management. All are related to self-discipline to some degree.

1. I don’t see the misbehavior.
2. I see it, but it’s not that big of a deal, so I’m not going to address it.
3. I see it, but I don’t want to address it because I’m afraid of the reaction.
4. I see it, but I’m not going to address it because I’m not sure how to do so effectively.

All must be avoided. Here’s just a few words on each.

I don’t see the misbehavior.
Awareness is crucial in the classroom. This one is hard to teach, but there are a few things that can be done. Sometimes, teachers can get really wrapped up in what they’re doing. It’s hard to see something if you’re not looking for it. Try to keep an eye to not getting overly engrossed in your lesson or process at the expense of being able to maintain behavior expectations. A useful way to maintain awareness is to position yourself in locations that allow you to see the majority of the class at any given time. Also, continue scanning the room at regular intervals.

I will say that missing misbehavior is probably the number one reason that certain teachers just don’t make it in the profession. It may be harsh, but sorry to say that if you can’t consistently catch misbehavior, teaching isn’t going to work out.

I see it, but it’s not that big of a deal, so I’m not going to address it.
Bad idea. This is low expectations in practice. Sometimes it can take the form of excuses for students like, “This is too hard for them anyway. It’s good enough that they have their shirt tucked in. Not talking for 10 minutes is a lot to ask for this kid.” Sweating the small stuff and attention to detail are important to maintaining a high-performing culture. Misbehavior needs to be addressed every time with high expectations for all.

I see it, but I don’t want to address it because I’m afraid of the reaction.
Regardless of the source, this fear must be conquered. It can be accompanied with the flawed logic for students of, “They’ve had such a great day, and I don’t want to set them off.” Low expectations again. Effective behavior management comes with a certain degree of intestinal fortitude. Our students need us to hold them to high expectations. We perpetuate problems of behavior or poor academic practice when we avoid situations that seem difficult. Can’t happen.

I see it, but I’m not going to address it because I’m not sure how to do so effectively.
This one is a knowledge gap. The solution is to empower yourself by knowing the student handbook inside and out and asking necessary clarifying questions of someone on staff. A clear answer exists, and knowledge is definitely power in this sense. Knowing how to effectively address a situation provides confidence and calmness in the moment. Both are crucial to great classroom management.

As you may have guessed, great classroom management requires great self-discipline on the part of the teacher. The metaphor I like to use is snowfall. It’s like it’s always snowing in the classroom. The lazy teacher with poor attention to detail will let the snow pile up by ineffectively addressing discipline issues (or not at all!). Before long, you can’t see your driveway anymore. If you decide to start shoveling then, it’s going to be much harder to clear. This is like being loose on expectations at the start and then trying to tighten up. You’re going to get resistance. The self-disciplined among us shovel at all times. This keeps a clear path with easy maintenance when the snowfall does come. Tight focus on this from the start even slows the rate of snowfall, so being clear, consistent, positive, and firm is a good investment up front every time.
A well-planned lesson makes the instructional day effective and helps keep discipline issues to a minimum. At its most basic, an effective lesson includes a standards-based objective, has clear explanations and student practice, is tightly planned with a clear agenda, assesses mastery, diagnoses sources of misunderstanding, and is at least somewhat interesting. These elements are foundational to master before moving on to more advanced lesson structures. They help make up the tool belt. While the belt may not be worn every day in more advanced teaching, it has to be ready and available to use when the situation calls. Important questions to target when creating a basic lesson plan include:

- Is there an objective that defines the outcome for this lesson?
- Is the objective aligned to the practice students will do, and is it appropriate for the time available?
- Is the lesson planned to the minute with no wasted time?
- Is it at least somewhat interesting via creativity or context?
- Is mastery of the objective assessed? Will it be easy to answer what % of students mastered this objective?
- Is there a diagnosis of any misunderstandings? For those students who didn’t get it, do you know why?

I’m just going to focus on two common pitfalls for purposes of these materials. One is aligning the objective to practice and assessment, and the second is diagnosing sources of misunderstanding. Let’s start with some context on a great objective.

An effective lesson is a measurable lesson. That’s why objectives are important. They define the criteria for success. The choice of an objective should come from the standard being taught, as all standards can be broken down into objectives to make them more bite-sized. We’ll return to how to break down standards into objectives when we get to K2 level 2 talk about long-term planning.

A great objective is rigorous and has a great verb. That’s right, the choice of the verb is everything, and a good guide is the ol’ Bloom’s Taxonomy. As you know, Mr. Bloom defined levels of cognitive behavior in ascending order of complexity. A great way to write objectives is to define what students will be able to do by using one of these verbs. A handy table is included below:
The successful objective defines what students will do. It should be measurable and rigorous. Objectives that lack a verb are just topics. “The American Revolution” is not an objective. “Students will be able to work on geometry problems” is an objective, but it’s a crappy one. The verb “work on” is measurable, but it isn’t rigorous. I can get 100% of students to somehow “work on” geometry, but it certainly doesn’t mean they’ve learned anything. Also, the object “geometry problems” is indistinguishable from yesterday or tomorrow if this is a geometry class. Specificity is key to measurement. “Students will be able to identify important parts of a multivariate table” is a better objective. Based on Bloom’s taxonomy, you’ll notice that the verb “identify” indicates this is an introductory lesson of sorts, and there may be cause for more advanced, related objectives down the road depending on the standard.
Objective alignment
A lesson geared around “Students will be able to identify important parts of a multivariate table” should have students involved in identifying parts of tables for a significant portion of the time. It should also measure a student’s ability to identify important parts of a table at some point. While these sound like no-brainers, some of the most common lesson mistakes revolve around alignment to the objective. For example:

- Misaligned objective and practice - the only objective is to identify important parts of a table, yet students spend more than half of the class actually plotting points, drawing straight lines, or determining the height of bars on a graph.
- Not enough practice time provided - the teacher talks about important parts of tables and diagrams and asks students to take notes on this information for 30 mins.
- An invalid assessment – students just got done doing 20 mins of identifying relevant parts of a table, yet the exit slip focuses on translating information from a table to a graph.

It’s self-discipline again, but this time it’s in the form of just sticking to what you’ve intended. Keep it simple: State what kids will do. Create a lesson that allows them to do it. Measure how they’ve done.

Diagnosing misunderstandings
Without going into too much detail, I’ll just mention another key lesson area that’s sometimes an afterthought: diagnosing sources of misunderstanding. We’re going to talk a lot about the concept of understanding as we get closer to the rigor chapters, but at this point, know that diagnosing misunderstanding is a valuable basic lesson component that’s often overlooked. It’s really not enough to just assess mastery. If kids don’t get it, you need to know why. This helps inform current (within the lesson) and future instruction. Whether verbal or written, asking the right question is the best basic lever for diagnosing the misunderstanding.

Let’s say the class is reading through a passage in The Great Gatsby. It’s included below:

There was music from my neighbor’s house through the summer nights. In his blue gardens men
and girls came and went like moths among the whisperings and the champagne and the stars.
At high tide in the afternoon I watched his guests diving from the tower of his raft, or taking the sun
on the hot sand of his beach while his two motor-boats slit the waters of the Sound, drawing
aquaplanes over cataracts of foam. On week-ends his Rolls-Royce became an omnibus, bearing
parties to and from the city between nine in the morning and long past midnight, while his station
wagon scampered like a brisk yellow bug to meet all trains. And on Mondays eight servants,
including an extra gardener, toileéd all day with mops and scrubbing-brushes and hammers and
garden-shears, repairing the ravages of the night before.

Here’s a question that is unlikely to help you determine the source of a student’s misunderstanding: “Look at the last line. Does the term ‘ravages’ refer to what was done with hammers and garden shears?” If a student answers ‘yes’, they clearly don’t understand, and their response doesn’t help pinpoint why. If they answer ‘no’, they may or may not actually understand, but you’ll still have no idea why.

Better to ask, “In the last line, to what does the term ‘ravages’ refer and why?” If you hold a high expectation for the response, this approach will give you a much clearer indication of misunderstandings the student may hold. In class, watch how students work through a problem. Listen to their discussions during group work. Be purposeful about gathering information on how students arrive (or not) at objective mastery. Make sure include questions in exit slips and assessments that allow you to gauge mastery and the source of any misunderstandings as well.

For the new teacher, the five step lesson plan is an intuitive way to structure classroom time. A metaphor I like to use when teaching basic lesson structure is learning to play a new game of cards. Your experience with a new game probably went something like this:
1. You heard about the game and it sounded interesting, and/or someone convinced you to try.
2. The game was explained before the cards were dealt – just the basics. The lecture was short because solely hearing about the game is boring and not a terribly effective way to learn to play it.
3. You played a practice hand or two. Cards were dealt, but everyone’s hand was showing. This helped instruct on rules real-time and let you ask basic questions about what was happening and how to play.
4. When ready, you finally played a hand “for real” with no others showing. The cards were dealt, and you weren’t a master, but you knew enough to be dangerous. This empowered you to ask deeper questions or clarify more complex instances as you came across them. You could win or lose, and it counted.
5. You wrapped up the game either feeling like a boss, vowing to avenge your defeat, or hating the game so much that you never wanted to play again.

These steps intuitively mirror a five step lesson plan with a hook, intro, guided practice, independent practice, and conclusion.

**Spark Level 2 – Long-term planning**

If *Spark* level 1 is about getting one day right, level 2 is about getting multiple days right. The long term plan defines learning standards and tells how each connects to the next over time. The plan also creates a systematic mechanism through which regular data analysis can occur. Let’s call these two big pillars of level 2 ‘planning’ and ‘analysis’. There’s a lot of literature out there about how to create learning objectives, form unit plans, and sequence curriculum. If you have the time and theoretical inclination, *Understanding by Design* by Wiggins and McTighe is worth the read. I of course prefer the more simplified/short version, so I’ll go with that herein. Whether you’re talking about planning or analysis, everything starts with standards, so let’s cover that first.

**The 1st Pillar - Planning**

*Standards and their use*

Learning standards define what students should know or do. They’re like the “what” of the plan. They’re similar to daily objectives in that sense, except standards are broader and cover a wider scope. For example, a reading standard might be, “Students will be able to locate and interpret minor or subtly stated details in more challenging passages.” The standards we use at Noble for English, math, reading, and science classes from freshman through junior years are the College Readiness Standards (CRSs) published by ACT. In courses outside of these, we most often use standards that will align to our students receiving college credit while in high school. The reason for both is simple – our goal is college graduation.

Now, the number that probably most accurately predicts graduation from college is one’s college GPA. If it’s low, you tend to drop out. According to top universities, about 80% of the prediction for your college GPA when you’re still in high school sits with your college entrance exam (ACT in our case because we’re in Illinois) and your high school GPA (overlaid with the difficulty of your coursework). This is why we focus on the College Readiness Standards, AP coursework, and other college-credit earning standards.

Different courses have different standards. For PE, Arts, Spanish, AP classes, and our 12th grade, we either create or use non-CRS standards that align to the objective of the course. In all cases, we want to clearly define measureable student outcomes and then assess progress on these over time. This drives the creation and use of assessments and data. In my mind, our work with standards falls into three practical buckets:

1. I teach English, math, science, reading, or a related course at the 9th-11th grade level. The standards are written for me via the ACT CRSs, and the summative test has been authored in the form of the EXPLORE, PLAN, or ACT. I may write some additional high-performing standards that I measure as well.
2. I teach an AP course, Crossfit certification, or something at the 12th grade level that has a summative test for which my students can directly receive college or other credit. I use these assessments to understand proper course coverage and write standards that align. I may write some additional high-performing standards that I measure as well.
3. I teach an elective course in which I write my own high-performing standards.

At the level of writing a basic long-term plan, groups 1 and 2 will follow a similar process. The process focuses on gaining a “fluency” for the output itself. Simply reading a standard isn’t enough. You need to become familiar with what the output should look like in application. This helps you write and sequence effective daily objectives and lesson plans.

For group one:
- Get a copy of the relevant summative (end of course or cumulative interim) assessments,
- map them by identifying which standard(s) are associated with which question(s),
- use the question stems and suggested answers to create a blueprint and understand how the standard breaks down into smaller goals that drive daily objectives.

For group two:
- Get a copy of the relevant summative assessments,
- categorize questions into thematic buckets that will refine to your learning standards,
- use the question stems and suggested answers to create a blueprint and understand how the standard breaks down into smaller goals that drive daily objectives.

For group three:
- Define what you hope to accomplish by the end of the course,
- break this into supporting themes that can be accomplished within a year (optional),
- write a summative assessment with questions that tangibly measure mastery of these concepts,
- categorize questions into buckets that will become your learning standards,
- use the question stems and suggested answers to define how the standard breaks down into smaller goals that drive daily objectives.

A quick word on assessments fits here. I’ve sometimes heard educators decry standardized tests. The argument usually revolves around some form of the assessment being invalid or not a “true measure” of student learning. No doubt there are some crappy exams out there, and I’m not here to defend all those. I’ll just say two things - 1) The ACT, AP exams, and a few other college-credit earning tests are actually pretty good. I’ve not seen much on those exams that I would say students shouldn’t know, and there are millions of data points over many decades from elite institutions which continue to justify their predictive use. 2) Our mission is basically to empower our kids and give them life opportunity. This is a world where you can’t do much without taking and passing an exam. Want to be a doctor, teacher, lawyer, engineer, nurse, personal trainer, PhD, MBA, CPA, etc.? You’re going to have a pass a test. We’re in a place where we’ve taken these exams, passed them, and now have life opportunity as a result. We owe it to our kids to give them the same opportunity, and it’s our responsibility to prepare them for this reality.

The three levels of planning
We’ve talked at a high level about the process of going from goals to assessments to standards to objectives. Now let’s take a look at how to actually do it. I like to think about planning at three, time-based levels: annual, unit (multi-week) and daily.

The annual plan requires a blueprint. That is, a map of what material to cover over what duration. The place to look for such a map is your end-of-course assessment. Per our groupings above, everyone should start with either looking at or writing a summative assessment that measures the cumulative outputs for the course. I only referenced group 3 as actually having to write theirs, but of course you’ll write many assessments, so it’s worth a word on the basics of assessment writing.
Writing a great assessment means making it valid, reliable, and efficient. Valid means that it’s aligned to the outcomes you hope to achieve and assesses only the standards or goals in which you’re interested. It also means that the assessment is a reliable way to assess mastery. One example of an invalid multiple choice question involves giving away the answer because the incorrect choices are obvious. Not useful to assess mastery. To make the point:

In order to calculate the instantaneous rate of change for a falling object, one would
a) Take the derivative of that object’s position function.
b) Eat the wheat crust off of an open-faced bologna sandwich.
c) Include an ampersand between ‘Hall’ and ‘Oates’.
d) Take a picture of a baby doing karate.

Reliable means that there are enough questions to ensure accurate mastery. One or two questions on a standard might not cover it completely, or with such a small sample, real mastery may be disguised by guessing.

Efficient means the assessment can be completed in a reasonable amount of time and you haven’t made it a monster for yourself to grade. Mastery Manager is your friend in this department. Be sure to check it out if you haven’t already.

Note that there are many types of assessments - authentic ones, tests and quizzes, portfolios, presentations, learning tasks, stage performances, workouts, etc. Each plays a crucial role in assessing student understanding, and the means through which they are measured will differ.

The annual plan – blueprint time

Ok, so back to the blueprint. I’m not going to spend a lot of time here on the process of writing standards from determined learning goals or assessments, but again, Understanding by Design has plenty on this. Assuming you now have the summative assessment(s) and standards in hand, it’s time to create a blueprint. A sample, fictional blueprint output is attached which combines questions from two cumulative pen and paper type assessments. You can find the file here:

In the file, you’ll notice two tabs – ‘Standards map’ and ‘Blueprint’. The process of creating a blueprint has two major steps. The first is to map each question on the assessment to a related standard or standards. While doing so, it pays to look at the question stem or prompt and the possible answers provided (if any). Together, these allow you to make learning notes and get an idea for what the standard looks like in application. This is crucial to help you translate your
standards into teachable, daily objectives. As you make your notes, it’s a good idea to use Bloom’s verbs to describe exactly how the standard is being assessed. In this way, the standard becomes both bite-sized and actionable. A sample output of this step can be found in the file above on the ‘Standards map’ tab, and the process is the same for courses with authentic, performance, or other assessments as well.

The next step is to summarize the information gathered in the mapping exercise. A sample output can be found in the file above on the ‘Blueprint’ tab. The finalized blueprint should show 1) the frequency with which certain standards are focused upon and 2) a descriptive summary of what those standards look like in application. This allows you to get a high-level feel for the relative importance of each standard and its weight in the course. The analysis will reveal that some standards are assessed more frequently and are more often related to other standards in fundamental ways. These can be called power standards. They’re more significant than numerous, and they’re likely to be central to demonstrated mastery of the course. You’ll want to spend more time on these and continually revisit them in the plan.

Writing the annual plan
Blueprint in hand, you’re ready to head into the annual plan. My recommendation for a plan at this level is to put it all on one page. At a minimum, the annual plan should convey

- The order in which standards will be taught
- Groupings of standards into units/topics/key learning questions
- The time expected to be spent on each unit and standard.

Long-term planning is an ambiguous problem. Tackling a long-term plan requires you to decide how much time to spend on each standard, how to group them, and in what order to teach. The blueprint is your friend in this process. As a starting point, I suggest using the frequency breakdown in the blueprint to decide how much course “weight” to give to a standard. Identified a power standard? All else equal, you’ll want to focus more time there than in other areas. You’ll then refine this starting point by reviewing the standard’s complexity (more complex = more time) and weighing it against the value of others in the course.

As you look through your teaching and objective notes, think about which standards build on or should come before another. Which should be first? Why? Should some standards be taught at the same time? This helps order them into a logical sequence. There’s more than one answer in this process, and content expertise and experience should help guide such decisions. As you order the standards, look for thematic trends or relationships between them. This will help define your units or topics as groupings of standards together. Units can come in a lot of flavors – thematic, skill-based, project-based, etc. The choice of your unit approach isn’t as important as the logic you use in deciding why certain standards should be taught together or in sequence. Note also that kids won’t always retain material at 100% if not revisited at some point. Better to anticipate this scenario coming and design your long-term plan with an eye toward opportunities to revisit/reinforce previous standards when the logic lends itself to do so.

Once the standards sequence is determined, look to refine the timing. It’s difficult to estimate how much time to spend on a standard, especially if you’re teaching the material for the first time or in a new way. To get the ball rolling, a general rule of thumb I use is one week per standard. This isn’t always the answer, but it’s a starting point. From there, I dig deeper and justify why this particular standard may deviate from that rule. Some may take only a few days. Others may take a few weeks. The justification for such decisions will come in part from your teaching and objective notes made during the blueprint process. In some tougher cases, you’ll want to actually write the daily objectives first and see how many days it will take to get to the rigor in the standard.

Below, you’ll find a fictional 9th grade science plan made using the real ACT CRSs. The file has two tabs – ‘Annual’ and ‘Weekly’. The ‘annual’ tab contains the one-pager referenced above. You can find the file here:

xxxx
The multi-week plan
After the annual, it’s time to think about the unit or multi-week plan. Again, there’s much literature on unit planning, but at its most basic, a multi-week plan is a sequence of daily objectives. Usually, the Bloom’s verb in the standard (along with your notes) can give some clues as to the cognitive depth of the standard itself, and therefore, an indication of how long it will take to master it. This is where you’ll want to reference your teaching and objective notes to get an idea of how many daily objectives will be required to scaffold up to mastery of the standard itself. You can use this information to build objectives over time and confirm how you’ll actually break down the standard into masterable (I made that word up) chunks.

For reference, you can see how a sample standard was broken into daily objectives in the basic unit plan on the ‘weekly’ tab.

Formative assessments
Your annual plan gives you a high level view of where you’re headed. The multi-week plan tells at a minimum what objectives to teach in what sequence. With these complete at the outset of a unit, it’s time to write some formative assessments that will allow you to track your classroom mastery over time. They’re “formative” because they’re intended to test the efficacy of the teaching mid-stream. The interval is up to you, but the rule of thumb I like to use is at least one smaller assessment per week and at least one larger one per unit. The process for writing these is the same as with any other – they should be valid, efficient, and reliable. I’ll use the terms ‘formative data’ and ‘classroom mastery data’ interchangeably.

It’s also a good idea to administer one cumulative/summative assessment (ideally, standardized and verified by an objective third party) each quarter. If you teach a CRS class, this is a Noble Network Interim. If you teach an AP class, this should be some form of an AP exam. This keeps you honest. The quarterly exam should be part of your regular data conferences. It’s a great way to check alignment and make sure the data your formative assessments are giving you is predictive.

Once the formative assessments are written, it’s back to Spark level 1 to write the daily plans. Remember, it’s always a better idea to FIRST write the formative assessments as soon as you know the time intervals and standards coverage and THEN write the daily plans. I typically write assessments at the outset of a new unit or quarter. If I write them much sooner than this, I find that my coverage or pacing will sometimes change due to unforeseen circumstances, and the assessments become less practical. But if I write them too late (like after I’ve taught something), I risk losing the forest through the individual trees. My formative assessment may no longer align with my summative, and/or my student mastery may look great on my own tests but not be a reliable predictor of what’s to come at the end. This would be because I’m only testing what I taught instead of what I SHOULD have taught. Yikes. That alignment can also be supported via good analysis.

The 2nd Pillar - Analysis
The second big pillar of long-term planning is analysis. We’ve already discussed the need for assessing objective mastery as part of the lesson plan, but standards mastery is even more important because it informs larger changes to the long-term plan. If the data is sound, it can also predict the future.

Measuring standards mastery first involves mapping standards to formative assessments. Remember, the assessments must be valid, efficient, and reliable in order to be effective. From there, each question or task should have a binary definition of mastery. For a multiple choice question, this can be as simple as “yes” if the question is correct, and “no” if it’s not. With open-ended assessments however, it’s a good idea to have a rubric that allows you to determine the threshold for mastery. Out of 5 possible points, is “mastery” for a free-response question defined only as a 5 out of 5, or would a 4 out of 5 count as well? Your guide should be that mastery can be declared in a binary fashion, and that the bar used truly reflects command of the standard.
Throughout the course, classroom mastery data should be tracked across multiple assessments and in many different fashions to increase reliability. Clearly, getting one question right doesn’t mean the standard has been mastered. Tools to do this will vary in form or design, but you want a high-quality way to track student mastery of your standards cumulatively over time. Remember that while one goal of mastery tracking is to inform changes to the plan, another is to help predict the future. Best explained by a metaphor.

Training for a marathon is tough. It takes dedication, self-discipline, consistency, a positive attitude, resolve, and smarts. It’s smart to train at high altitudes. This makes the training more difficult. Training in Denver for a marathon in Houston makes the final race easier. Your Denver times will (and should be) slower than your Houston time. Training in Houston for a marathon in Denver means there’s going to be a negative surprise come race day.

A strong result is more likely when the training is tougher than the final race. This is what you want to see in your standards mastery data. A rigorous classroom will show that the classroom mastery (formative) data is slightly lower than the summative (interims, AP exams, etc.). Such a scenario often correlates with high-performing final results.

One example of this is the classroom data for Kashawndra and May. This duo’s rigorous approach and analytical focus has consistently put each of their PLAN growth results at or near the top of the city every year for 10th grade science. Here are some samples of their quarterly data conference charts that compare classroom mastery by standard to the latest science Interim for that year. Classroom data is in blue, and Interim data is in red. Each cluster pair represents a standard:
When a pattern like this is accompanied by strong summative results, you can tell that they measure data with self-discipline and challenge their students in the classroom. Both have done a top-notch job of consistently delivering high-performing outcomes and creating an awesome educational experience for their kids.

So what should one watch out for in the data and analysis process? There are four common pitfalls in effective classroom analysis. As you might imagine, they revolve around situations where classroom mastery exceeds summative assessment mastery. All are related to training in Houston for a marathon in Denver.

1. I confuse standards mastery with grades for the course.
2. I assess students on a standard only when it’s “fresh” – i.e. right after that standard has been taught.
3. My assessments only measure what I’ve covered, not what my students should know.
4. My assessments often measure only one or a few standards in isolation when I gather data.

Just like the classroom management pitfalls, all must be avoided. Here are a few words on each.

*I confuse standards mastery with the grade for the course.*

Classroom data does not equal grades. They should be correlated, but they aren’t the same. Grades often have many factors included such as participation, homework, projects, quizzes, curves, etc. Mastery is the more “pure” measure of a student’s demonstrated performance with a standard, and it should include only data from high-quality assessments. Grades will often be higher on a percentage basis.

*I assess students on a standard only when it’s “fresh” – i.e. right after that standard has been taught.*

It’s self-discipline again. The plan is made, there’s much to cover, and it’s easier to sequence things, check the box on their understanding, and assume it’s a done deal. It’s not. Assess old standards on new tests. Make the course a truly cumulative one. Where it makes sense, it’s important to spiral standards and include planning time to revisit previously taught standards in new ways. The summative assessment is sure to do this, so your training better do so as well. The cheap way to circumvent this is in the form of a last minute “review”. This is the old cramming scenario your university professor warned you about. As mentioned before, it’s better to design your long-term plan with an eye toward opportunities to revisit previous standards when the logic lends itself to do so.

*My assessments only measure what I’ve covered, not what my students should know.*

This is an alignment issue. It’s no problem to have an innovative approach or a different sequence, but you still need a way for your data to be predictive. Otherwise, you’re flying blind. Often, this can mean being caught unprepared by the time race day rolls around.
My assessments often measure only one or a few standards in isolation when I gather data.

Not rigorous enough. Pattern recognition makes things easier. If you’re asked to execute the same mental process over and over again in sequence, it can keep you from being challenged by deeper or varied thinking. A well written summative assessment changes it up. If your training is supposed to be more difficult, you should collect mastery data under similar or more rigorous circumstances. Again, be sure to assess old standards on new tests.

So to recap this section, the annual to daily planning process involves the following steps:

- Get a copy of the relevant summative (end of course or cumulative interim) assessments and/or define and create your learning outcomes.
- Map them by identifying which standard(s) are associated with which question(s)/prompts (you may have to write your own standards if not already defined), and make learning notes as you go.
- Create a blueprint.
- Use the blueprint to organize standards and make the annual plan.
- Create as many multi-week plans as practical by sequencing your daily objectives.
- Write formative (classroom) assessments for that unit.
- Write your daily lesson plans.
- Track and analyze data to inform changes to the plan at all levels over time.
- Crack open a beverage and watch something entertaining. You deserve it.

Rigor – Spark levels 3 and up

Welcome to rigor. Rigor as we’ll define it lives in levels 3, 4, and 5. Level 5 is a direct consequence of 3 and 4 being done well because it means true student empowerment. This section is for those who have mastered the Basics. First, let’s cover some conceptual background. Rigor as a term is thrown around rather loosely in education. It’s one of those words like ‘critical thinking’ - too abstract to be useful. I’m here to tell you that rigor is not simply “moving faster”. It’s also not giving more problems or providing extension exercises. Instead, rigor is holding a higher expectation for demonstrated student understanding. This point is the key to unlocking exceptional growth, so let’s explore it a bit further.

The trouble with high expectations is that most people think they already have them. The reality is that most of us could have much higher expectations than we do. That’s why introspection is actually the first major step on the path to realizing
rigor. Think back to the last time a student in your class gave an answer lasting 3-4 minutes, without interruption, correctly, and with precise command of relevant vocabulary. I’m not talking about a presentation or final project. I’m talking about a plain, normal day classroom prompt like, “Please share your thoughts on a solution to this topic.” For most people, the answer is probably never. The reason is that it’s not an expectation. We often expect our students to offer one-sentence or even one-word answers, and so the classroom design is geared to reinforce this.

Low expectations abound in ways we often don’t even consider. Ever stop to realize that we promote students to the next grade level who have mastered only 60% of the material? That means up to 40% of what should be understood is a giant hole, and then this compounds on itself year after year if the student stays around the 60% mark. And this assumes that the 60% is actually given with rigorous fidelity! Yikes.

We’d all say we want to hold higher expectations for mastery, but there’s this primary problem of time. High school is “supposed” to take four years. Class lengths are limited. Deeper understanding requires spending more time on a topic, but we often have to “move on because we have much to cover”. There’s a packed plan and only a limited amount of time to get through it! Time is fixed so mastery ends up being variable. In an ideal world, it would be the opposite: mastery would be fixed at 100% and time would be variable. So how does one balance the opposing forces of getting through all the material AND ensuring that the mastery is high?

The answer lies in teaching students to teach themselves. The low-rigor classroom does a bad job of empowering students to learn without their teacher. Like you, I’m not interested in a 15-hour school day. If time is the primary constraint, then the solution is to empower students to make the time without you more valuable. The low-rigor classroom defeats this. Check out a quick comparison of some common habits of the low-rigor teacher vs habits of the high-rigor teacher:

<table>
<thead>
<tr>
<th>The low-rigor teacher…</th>
<th>The high-rigor teacher…</th>
</tr>
</thead>
<tbody>
<tr>
<td>surprises students every day with new material and expects them to master it in 30-45 minutes</td>
<td>gives students material in advance of class and expects them to arrive with a basic understanding of it</td>
</tr>
<tr>
<td>thinks that it’s enough for students to use 2-3 sentence justifications for answers</td>
<td>commonly expects students to give 2-3 minute responses</td>
</tr>
<tr>
<td>tells students to “skip it and come back” when they get stuck</td>
<td>tells students to “seek out resources and decide the right questions to ask” when they get stuck</td>
</tr>
<tr>
<td>generally reinforces that a few minutes is long enough to spend on a problem, paragraph, chart, or issue</td>
<td>reinforces that any length of time is acceptable to spend on a problem, paragraph, or chart if looking to understand it completely</td>
</tr>
<tr>
<td>makes homework an exercise in repeated practice or pattern recognition</td>
<td>makes homework an exercise in preparation for the next class day</td>
</tr>
<tr>
<td>moves on instead of ensuring mastery</td>
<td>models grit by not moving on until a high percentage of the class has 100% understanding</td>
</tr>
<tr>
<td>hears students express that they “get it in class, but just don’t do well on exams”</td>
<td>hears students express how easy the exams are compared to normal classwork</td>
</tr>
<tr>
<td>keeps most of the class dialogue between student and teacher</td>
<td>monitors as most of the class dialogue occurs between students</td>
</tr>
<tr>
<td>allows students to equivocate</td>
<td>holds students accountable for using precise and accurate language</td>
</tr>
<tr>
<td>paraphrases and summarizes student responses</td>
<td>makes students revise their own responses until 100% correct</td>
</tr>
<tr>
<td>finishes students’ sentences for them</td>
<td>waits patiently as students work to find the right words to express themselves</td>
</tr>
<tr>
<td>leads every class</td>
<td>uses students to lead each other</td>
</tr>
<tr>
<td>talks about the importance of culture</td>
<td>reinforces the importance of culture through consistent action</td>
</tr>
</tbody>
</table>
All of the things in the low-rigor column create a growth ceiling. They may work for 6 points of growth across three years, but they won’t get you 10. **Done right, rigor empowers students to effectively learn while still away from the classroom, thereby ‘creating’ more time.** But how exactly does holding a higher expectation for demonstrated understanding accomplish this? The answer lies in self-awareness.

**Jumping ahead to Spark level 5**

All right, so I promised we’d dive into levels 3 and 4, but follow me if you will to the top of the mountain for just a minute. Nice view. Up here, students are self-educated. They can tell with certainty what deep and complete understanding actually looks and feels like. Using this knowledge, they can accurately self-diagnose their own understanding and tell you whether they are 30%, 60%, or 70% of the way to REALLY getting something. They can then determine which questions are necessary to close the gap. They recognize and clarify their misunderstandings through self-determined efforts, and they’ve learned to motivate themselves to do so. In this way, they are empowered to realize their potential. **This is the only truly and consistently differentiated classroom.** It all hinges on both investment and knowing and feeling what a deep understanding actually looks like. For reasons we’ve covered, most kids are rarely held to the expectation that they must completely understand anything. 100% mastery is the exception, not the rule. This makes kids notoriously bad at self-diagnosis. It’s also disengaging to not get something, not know the right questions to ask, and not be expected to completely understand anyway.

The rigorous classroom operates like jet engine. If a Ferrari and a 747 were to race, at first, the plane will be behind. The Ferrari will lead initially because it can over short distances more quickly. But we’re going from New York to Los Angeles. The school year is long. The jet’s faster top speed will overtake any car long before the end. Back in Level 1, we talked about how creating a classroom of disciplined consistency takes an initial investment of time at the expense of course coverage. But it’s worth it because the end justifies the means. I also posited that consistency across an entire school on this dimension makes everyone’s result higher, because there’s less time wasted fighting pockets of lower expectations. Well, the exact same logic applies for rigor. We can even use the same chart if I just change the axes and title.
The rigorous classroom takes strong cultural investment and training that accelerates student learning with time. But it starts out really slowly. If kids are used to having you buy, cook, and serve the food such that all they have to do is chew, it’s going to be slow going when you hand them an apron and a shopping list. But if we play it right, they’ll be feeding themselves for years to come.

We’re going to dive into rigor through the lens of several tenets crucial to a rigorous classroom design. That said, you can’t just flick a switch and have them work effectively. There’s an important foundation upon which they have to rest. It’s called investment, and this is Level 3 for a reason. Students have to be intrinsically motivated before they’ll persevere through challenges and help each other. The culture you create will make or break your ability to have a rigorous classroom.

**Spark Level 3 – Investment (the intrinsic kind)**

LaVaughn Cain is known as “The Motivator”. There’s a reason. Every year, his PE class takes new freshmen and gives them an identity within his classroom. It’s bigger than PE. It’s about life. He espouses and enforces philosophies like, “attention to detail” and “you don’t have to get ready if you’re always ready”. He gives kids the time and inclination to reflect on their experiences via his self-titled critical thinking sessions and stories. He lets students lead. He models the energy and grit he expects to see by getting down on the floor and doing the workouts himself. He shouts. He laughs. He’s comfortable in his own skin, and his approach is an authentic expression of love. He lets kids fail often so they can learn, and he’s right there to help them up after they’ve done so. There are chants, inside terminology, procedures, and call and response exercises that the students own. Kids lead. He makes it easy to want to work hard. In his class, you are significant because you are part of something greater than yourself. You’re accountable to the group, and you become great at things. Both help create an identity.

Motivation and investment are crucial to achieving success. No amount of knowledge or ability will be useful if not accompanied by the motivation to employ them. You may have heard me say before that significance is the greatest motivator. We want to matter. Everyone completes the statement, “I matter because ________” differently. Some matter because they’re rich. Others matter because they’re athletic. I matter because I’m cute. I matter because I’m good at
math. I matter because I’m in a gang. I matter because my mother loves me. I matter because I’m a child of God. Everyone has their thing, and most of us will change this source of significance throughout our lives. Sometimes we discover it on our own; sometimes other people give us the label, and we make the choice to internalize it. Whatever the method, our source of significance defines our identity, and it’s our primary motivation. We use it as a label for who we are, and we’ll fight hard to defend it.

The sure-fire way to intrinsically invest someone is to make them matter. As Taylor Mali once said, “I can make a C+ feel like a Congressional Medal of Honor”. A student who finds their identity in your class is hooked. This happens through great culture. Think of culture as a means through which investment can occur. Any culture is defined by a choice of few, clear priorities that are consistently reinforced. The trick is picking the right priorities and knowing how and when to reinforce them. For a classroom, I’d argue that the right priorities always revolve around having students be accountable to making each other better.

Core values are the list of priorities that define your culture. They are the way you reinforce and hold kids accountable to making each other better. In this way, values are behaviors. Together, the right values and classroom structure can create intrinsic investment. But where should one start? Since everyone wants to matter, I’ve found two places that are consistently reliable: people want to be liked, and people want to be good at stuff. It’s our five-year-old brain talking. These two are intrinsic motivators that directly affect most people’s identity. The reason failure is a common fear is because 1) it’s usually interpreted as reinforcement that you’re not good at something and 2) it can cause other people not to like you. Think being picked last for kickball. It’s the worst of both. If you’re last, not only do you suck, but nobody likes you. Acceptance (being liked) and self-efficacy (being good at stuff) can cause fear of failure to dissipate, but it takes a culture that strongly reinforces both before kids will believe.

Dragon slaying – being good at stuff
Self-efficacy is relative - you can define for kids how it’s measured. They’ll look to you to reinforce whether or not they’re good at something. As long as you can get someone to believe differently about themselves and their capabilities, they’re hooked. That’s because self-efficacy is a wonderful, addictive drug. Just create a nasty dragon and have them eventually slay it. I say eventually because failure is an important ingredient to build in. It’s actually a good thing. It’s necessary to learn grit. Let’s check out dragon slaying in action.

Join me in math class. I’m a kid who comes in fired up. I love math, and I matter in part because I’m good at it. If I get a bad math grade, my first reaction isn’t going to be to give up my identity. Rather, I’ll double down my efforts for that next test and defend my significance. It tells me who and I am and why I matter. As long as losing the identity is more painful
than the work required to reinforce it, I’ll put in the effort. All is great until I realize that this is a really rigorous math class. What happens when the scales start to tip? What if I keep getting bad math grades despite my efforts? How long will I hold on to this identity? Or, what if I’m the kid who already shows up knowing that I hate math? After all, I’m not good at it, I haven’t been for years, and all math teachers smell funny anyway. The mistake some teachers make at this point is to lower expectations so the kid can feel successful in place of actually creating a culture that brings them up to meet the challenge. They give them easier problems, for example. While becoming good at math may be an important desired result, self-efficacy can be defined a lot of ways on the way there. I like to define self-efficacy as work ethic and persistence at the start. Even if it’s a low-performing class, you don’t have to be good at math in order to work hard. Remember, you’re just looking to have them believe differently about themselves or their capabilities in some way.

To do this, make a nasty dragon. Give the dragon some teeth and horns. It should be too hard to kill, but only just. Failure is an important ingredient to build grit. Write an open-ended problem and ask, “Who can share their thoughts on this question? I’m looking for a minute or longer response.” Most students will assume that a typical response should last about a sentence or two and that it involves the answer and maybe one additional point. They won’t know what to do with one minute. Add to that the fact that you expect the use of precise vocabulary and only relevant connections in their answer. Boom. There’s the dragon.

If the standard for the response is held high, it may take 20 minutes, plenty of discussion time, and 7 or 8 attempts before a sufficient answer is offered. Each one will probably be a bit closer than the last. When it finally happens, there may even be applause or some other congratulations for the accomplishment, and students will feel immediately capable – with so many participating and discussing, it’s as if all played some role in contributing to the answer. You could follow it with, “who has ever spent 20 minutes on a single math problem?” Most will respond that this is new territory. Some probably didn’t even think it possible. Dive back in for the next question. Now you’ve got them. They’re starting to believe in a higher standard.

A lot of cultural lessons are rolled up in this self-efficacy example. One is that you’re teaching them it’s ok to fail and persist. Two is that you’re implicitly modeling the bar they should use when holding each other accountable for accuracy. This helps them make each other better without you. Three is that it’s ok to celebrate and encourage other people. Four is that they have in them the capability to slay nasty dragons through persistence and work ethic. For those who came in with low expectations, only the actual experience of doing what was previously thought as impossible (along with the requirement to fail repeatedly) will permanently change their perspective.
Being liked

We also want to be liked, and group accountability is a great way to utilize this. You’re stronger and more capable when other people are counting on you. This is why fitness classes are popular. Few of us like to work out by ourselves, and we’re more motivated when the group is behind us. I also believe that when you’ve really got nothing left to give, sometimes the only motivation is the person next to you saying, “Press on. You can do it.” Many of us will give up much sooner if we don’t have that person there. Our desire to be liked makes us wired to seek that validation. The effect is even more pronounced if that person is going through the same pain you are. That’s making other people better.

Let me take you to one of the most extreme examples I know regarding personal motivation and group accountability.

The Basic Underwater Demolition/SEAL (or BUD/S for short) training is an intense test of personal motivation and willpower. This training lasts 24 weeks and is a step in becoming a U.S. Navy SEAL. It measures stamina, leadership, attention to detail, and most importantly, the ability to work as a team. This is because for SEAL teams, like in many other walks of life, the difference between success and failure lies in being able to depend on your teammates. SEALS are among the most highly capable soldiers in the world. The program has to be rigorous. It holds the highest of expectations. It’s a powerful test. The training is optional and selective. Despite this, more than half of those entering the program will actually quit, with the majority (2/3) dropping out during the first phase of physical conditioning. If you have the time, I certainly recommend watching the entire BUD/S documentary for class 234. However, if you want just a slice, check out the following:

Part 3 – watch from the start through 16:20 - https://www.youtube.com/watch?v=HXKr9SJr2D8&list=PLjI7yucVBQbBH GAR4AGn5NYv70UvlbVPa&index=3

As people, our physical and mental limits are extreme. Some of us may watch SEALs, and think, “There’s no way I could ever do that.” Yet, many people have completed the training, and the instructors know and enforce what high expectations look like because they’ve all been SEALs themselves. They’re walking into the situation with, “These guys just don’t know what they’re really capable of.” As instructors ourselves, we often think the same things about our kids. Our ability to get them there depends on developing a clear vision of what it’s supposed to look like and a readiness to enforce the high expectations required. There’s motivational power in a great team, and creating a classroom structure that incorporates group accountability is important for intrinsic investment.

A word on acceptance as it relates to being liked

Jason Ronai ran a PE class culturally focused on breaking barriers. He was a dragon maker. Kids tried, failed, and then slayed them all the time. He gave them targets that, at least to kids, were seemingly impossible to perform. 10 push-ups?!! No way. Three weeks later, they’re cranking out 30. It’s about believing differently about yourself and your capabilities. He did it by raising the cultural bar. When the going got tough, kids would run around repeating his cultural phrase ‘No fear, no embarrassment’. That’s because if you can only do 5 push-ups, you’re going to look like an idiot on the road to getting 30. That’s just part of it. Most people make excuses for things they aren’t already good at, though ironically, they’d be much better at them if they were only willing to try. Acceptance is a big component of being liked, and it’s a major reason why people don’t reach their potential.

The outside world loves to berate or make fun of people who aren’t good at something. It’s especially prevalent with teens because their source of significance can be shaky. They’re still trying to figure out their identity, and one easy way to fill the confidence void is to put someone else down. For someone to become great, they must be lifted up. Let me be very clear - that doesn’t mean false praise or protecting them from the truth. If you suck, you suck. Rather, acceptance is having them understand that it’s actually ok right now. You’re supposed to suck before you become better. So what if I can only do 3 push-ups right now. So what if I can’t read. So what if I have a 1 on my first AP practice test. Those don’t have to be a source of embarrassment. They’ll change as I put in effort. It’s the effort that matters and for which I should be accountable, and my ability doesn’t define my acceptance. Our ability to create a culture of acceptance gives permission to kids to try and fail. It says, “You should continue to try and work on this thing even though you’re not good at it right now.” It’s ok to fail, but it’s not ok to avoid effort. ‘No fear, no embarrassment’, means no fear of rejection as a result of ability. Acceptance = confidence.
But we’ve got to be ready to enforce it. Given the “natural condition of mankind” as Hobbes would put it, you have to enforce acceptance with tremendous self-discipline to create an effective culture around it. It’s 100% on you to be the first example that kids will emulate. If there’s a place to go crazy overboard with consequences in the extreme, it’s when someone belittles another kid or walks around with a sense of entitlement. These are culture killers. There’s going to be a lot of failure and underperformance on the road to excellence in the rigorous classroom. You’ve got to be hyper-perceptive as an advanced teacher who’s already mastered clear, consistent, positive, and firm. If unchecked, belittlement is a culture and investment killer that builds a rigor ceiling.

The internal struggle
What’s both fun and scary about doing this well is that it’s introspective. The first model is us. Kids will look to you as a mirror for who they should be, and we have to be ready to practice what we preach. That means facing our own insecurities. Some of us like to ridicule people who try and fail. Some of us would never be willing to do push-ups in front of people. Some of us will just say, “I’m not good at math” as an excuse for why we shy away from math problems. Some of us would never try to speak Spanish. We make up excuses as to why, but the reality is, we’d look stupid, and we only stick to things we’re already marginally good at. It sucks to get laughed at, we want to be liked, and fear can rule us.

I’ve got good and bad news. The bad news is that unless we practice what we preach, the rigorous classroom is going to elude us. You really can’t fake this stuff, and modeling and enforcement are crucial. We’re going to have to fight against our fear of vulnerability. The good news is that when we win, we can grow. As our own ability to facilitate great culture improves, so too will the strength of our personal relationships. As we get rid of our excuses and embrace imperfection and failure, we remove the chains that bind us. What a beautiful design!

Modeling and enforcement - keys to an intrinsically motivating culture
Great culture takes constant modeling and reinforcement. Just like a garden, the work is never done; some pruning always needs to take place to get the best yield. The following are some cultural core values I recommend for an intrinsically motivating classroom. They all revolve around the theme of “making other people better” via self-efficacy and group accountability:

1. Fail well. Good failure makes us better.
2. Good is the enemy of great. Attention to detail makes the difference.
3. No fear and no embarrassment. For growth, it’s necessary to look stupid.
4. The goal is 100% understanding for everyone. It’s not about you. Support them, and you’ll find yourself.
5. Lack of effort and belittlement of someone else are cardinal sins.
6. You’re capable of much more than you think.

Modeling and enforcement starts by being willing to share our stories of failure with our kids. It also involves picking out and celebrating the kids who make other people better via their cultural excellence instead of their ability. Your ability to catch and recognize these cultural moments shows kids the care and the attention to detail they should emulate. Here’s few examples:

- As everyone finishes a task, look for that one kid who is clearly slower and more diligent. Sometimes it will be a kid who’s struggling but refusing to give up. Other times it will be a kid who’s just more thorough. Either way, they’re paying attention to detail and want to get it 100% right. You want to celebrate them authentically because they’re last or close to last for the right reasons. Wait until everyone is done. Then talk about how they’re you’re hero for their attention to detail and self-discipline. Don’t worry, you’ll teach them speed and accuracy in time.
- Occasionally suggest that kids take on more just to become better. Then watch closely for those who ask for more problems, do more reading, or carry the burden of others without any form of complaint. At first, they’ll do this if they respect you and believe that you’ll recognize it. In time, they’ll do it for the intrinsic value. A good moment to catch is when a kid has to do more work because their group has fewer members for example. If they smile their way through it, highlight them after all is said and done. This is someone who signs themselves up for “unfairness” in order to become stronger. That’s motivating.
- Leading from the front when it comes to consequences is a form of modeling acceptance. If there’s a group consequence being given, or if I tell a kid to do some push-ups, why not also impose that consequence on myself? After all, as the leader of the classroom, I’m responsible for the outcomes. Push-ups make me better anyway. It
shows kids how to accept consequence and accountability as beneficial, and it makes it such that there isn’t undue pressure to be perfect or become embarrassed. It teaches the integrity to accept the consequences you deserve, and that others will be there with you. You’d be amazed how getting down on the floor with a kid will cause 5 or 10 others to drop down and want to do the same.

- On this note, anytime a kid is willing to do something difficult they don’t have to alongside someone else, it’s time to celebrate them. It doesn’t mean that the helper is necessarily making the job easier. Challenge is good. It means that they’re willing to endure the same pain in order to be motivating. They’re choosing to take part in the group accountability when they don’t have to. Be sure to make a big deal of it.

When some of your kids start to comprehend the culture you’ve created, they’ll want more of that Kool-Aid. Those early sponges just want to know what they can do to make others better. Sometimes they don’t know what that choice would look like in the moment. Guide them. Give give them a thought on how they can lift someone up, and then watch them bask in the glory of thanks and appreciation from the kid they helped. See a situation when you might jump in to praise or celebrate, and instead, suggest to a kid that they should do it. It helps them learn to catch the moment, and your permission gives confidence. Before long, they’ll start to see what you see and will have the confidence to do what you do.

Wrapping up Level 3, motivation is required for rigor because there’s going to be a lot of failure. The best motivator is significance, and significance and identity are intertwined. You want kids to find an identity in your class. This is accomplished through a great culture. Your culture should do three things: 1) help kids make each other better, 2) make kids matter and make them significant, and 3) build grit and prepare them for the rigor to come. Core values + reinforcement of them = culture, and all cultures should point to making other people better. For kids, this requires great modeling and reinforcement. My recommendation for creation of a classroom culture is to use the levers of self-efficacy and group accountability because they’re powerful drivers of significance. Everyone wants to be liked, and everyone wants to be good at stuff.
**Spark Level 4 – How to Think**

One half of rigor is investment. The other half is thinking and problem-solving. Again, rigor is *holding a higher expectation for demonstrated student understanding*. If you’ll recall from our visit to level 5, this matters because it’s the key to self-awareness and therefore self-education. The goal is to empower students to become independent, learn without us, permanently solve the time vs mastery problem, and thereby unlock exceptional growth and fulfillment of potential.

You can’t really learn Spanish without speaking it. You can’t really learn to read unless you have the chance to talk and write about what you’ve read. You can’t really understand math unless you talk and write about what you’ve solved. Communication is required in order for us to make full meaning of things. We’re social creatures, and the process of explaining helps solidify our understanding. Think how much better you understood a subject after you taught it! This is why the more rigorous classroom must involve ample opportunity for students to communicate their understanding.

Keep in mind that the path we’re about to tread assumes you can build and maintain an excellent class culture. The list below is a focused look at exactly what is meant by “higher expectation for demonstrated student understanding” in the context of classroom design and execution. It hinges on the assumption that the very best teachers will ultimately make themselves unneeded. With a mind to that, let’s finally dive into the tenets of a rigorous classroom. They rely on all Levels that have come before and are as follows:

1. **Homework as preparation for students**
   - *Prep is most often given in advance of the class* – With advanced preparation, students are empowered to reach deeper levels of understanding during the class itself.
   - *Prep covers conceptual understanding of “why” or any historical context that helps to answer “why”.* Understanding why is the key to deciding what to do when faced with an unknown problem or situation. Purpose is paramount to problem-solving and ingenuity.
   - *Depth is preferable to breadth.* Focus on quality in order to accelerate coverage. Depth of understanding quickens the acquisition of new concepts, translates to more learning outside of the classroom, and ultimately yields more growth. As often as possible, make time variable and mastery fixed by choosing central/foundational standards and expect complete understanding.
   - *Prep is aligned to achieve desired results.* Use and track student data in a way that’s predictive of the desired outcome in order to make relevant planning decisions.
   - *Prep unites concepts cumulatively such that none become irrelevant or forgotten.* Great planning intuitively connects all that has come before via clear reasoning. Such builds greater depth of understanding.
   - *Prep is a dragon that builds investment.* Foster self-efficacy through perseverance in the face of challenges.

2. **Discussion or performance-based classroom structure**
   - *Students spend the majority of class time interacting directly.* They have the continued opportunity to respond to, correct, motivate, and/or lead one another.
   - *Students are organized into smaller groups or squads; class oscillates between smaller groups and whole group as needed.* Consistent, cohesive squads and teams develop group accountability.
   - *A mix of Hot, Warm, and Cold prep ensures complete student development.* Prep can always be thought of as the work that students do in advance of their answers or performances.
     - *Hot* – This is just another way of saying the first bullet under #1 above. Students receive prompts in advance and have time to develop their own answers or conclusions prior to arriving in class. The majority of class days follow this model. Builds depth of conceptual understanding that empowers students to better retain information and increase learning rate over time. Fosters resourcefulness and engagement.
     - *Warm* – Students receive new prompts during the class but are permitted to discuss and come to conclusions with group members. Time pressure is applied. Builds listening, communication, and academic skill under time constraints.
Cold – Students receive new prompts during the class and are not permitted to discuss with others before offering their own conclusions. Time pressure is applied. Builds independent academic skill under time constraints. Cold prep can but may not necessarily overlap with regular student assessments.

- Students are given specific feedback regarding the quality of their responses or performance. This can come from anyone, but it must specifically address either the shortcoming or reason for excellence to be effective. Ideally, kids should be locked into every answer and carry a critical eye. You’re training their ears and eyes to identify violations of the standard via modeling through this feedback.

- Repeated opportunities are given until the standard is met. Feedback itself is not enough. There must always be another chance to deliver on high expectations (again, time variable and mastery fixed). Be careful not to lower the expectation on the repetition.

3. High-quality student answers or performances

- Students always answer why. Every answer contains a relevant reason for the answer or approach given.

- Student answers are 100% correct. Envision the 100% standard before the response so you’ll know what to listen/look for. Think of relevant points which compose the standard (a rubric of sorts) when the question or prompt is authored.

- Student answers are exhaustive. Some prompts have more than one correct answer, but no answer is correct without justification. Exhaustive answers include relevant justifications and explanations, full sentences, and no teacher interruptions or modifications to student statements.

- Student answers are greater than 1 minute in length. Open-ended communication provides the opportunity for students to structure ambiguity and organize thoughts.

- Students use few pronouns and especially avoid the use of “it”. Specificity in responses creates a higher expectation for communicating understanding. Extreme clarity increases engagement and ensures all can follow.

- Students use standard academic English and avoid “like” as a filler word. Students must think before and while they are speaking. Every answer or speaking opportunity is a mini-performance. All performances must be excellent.

- Student answers are clearly audible to all in the classroom. Class engagement depends on hearing every word. Requiring an audible tone is a confidence-builder in those who struggle.

You’ll notice that these tenets (resting on a foundation of Levels 1-3) still lend a lot of flexibility to how the class is actually structured. Timing, grouping, the amount of teacher facilitation, use of technology, curriculum, the mix of problems or prompts, etc., are all still up to the teacher. This list exists to merely establish the floor. While there are many class designs that can drive deeper understanding through this framework, I do believe it operates best in a discussion-based design.

To make the framework more concrete, I’ll provide an example through the lens of an AP Calculus class I taught over the last three years with some annual assistance. Dan, Cassie, and Nikki were each incredible teachers in their own right, and I benefitted from their direct support in each of the three years, respectively. I led the classroom planning and execution while they (in different years) assisted in the quiz writing, exam compilations, and data analysis so I could still act like I was a Principal. The course was taught through a discussion-based model that I authored and refined via iterative and relatively continuous failure. As Edison once proclaimed, “I have not failed. I’ve just found 10,000 ways that won’t work.” In my book, 10,000 ways that won’t work is valuable failure, so I don’t mind calling it what it was.

All students who wanted to take the course (and some who didn’t) were admitted. Entering math ACT scores ranged from 17 to 31. I wanted the class to be larger on purpose because I was looking to see what was possible to accomplish with the constraints of a bigger group, so class sizes ranged from 30 to 37. For the same reason, we didn’t co-teach or subdivide the class between us. I last did a calculus problem about 20 years prior, and I had never taught math before, so I was pretty much a week or two ahead of the kids for most of the first year. It was a fun ride, and I learned a lot. A total of 100 students took the course over three years. 75 passed the AP exam, so we were able to move the needle just a bit. The latest year included an 89% pass rate, so I like to think I got at least a little better with time 🎉. The goal of 100% passing eluded
us because of my lack of calculus knowledge and poor problem writing ability. Dan, Cassie, and Nikki on the other hand are and were incredibly capable.

I’m proud to say that since 2013 many others more capable than I have gone on to use this framework in achieving consistently high levels of growth in their classrooms. Plateaus hit by some of our most excellent teachers were broken through discussion-based approaches employing this foundation. Successful classes have ranged across all subjects and with students of every ability level. It’s exciting work, and more importantly, it’s really fun.

So let’s take a look at the tenets in action.

1 - Homework as Preparation for Students
There’s a reason this is number one: Depth of understanding requires preparation. A class design that introduces new material to students when they walk in the door is defeating rigor. So is using homework as a means to practice the new thing introduced earlier that day. *Homework should more often be preparation than practice.* The real value we offer as teachers is not to introduce new material; it’s to take kids to a level of understanding they can’t or don’t know how to initially accomplish on their own. Therefore, we should maximize class time to align to this.

AP Calc was structured using a problem-based, group discussion approach. Each night, I wrote and assigned 3-5 problems that students were to prepare. The number of questions was chosen to align with how much class time we seemed to need to ensure high demonstrated understanding by a supermajority. I came to the question number over time, trying to find the balance between deep understanding and course coverage. I found that 3-5 questions in a period allowed me to have every student in the class reach 100% understanding in some way at least once every other day or so. The tools students needed to solve the problems were written into the problems themselves. This kept me from having to take class time and teach them directly. The problems were written such that kids were discovering new skills and abilities as they solved them.

The question-writing was tough. Many a class was wasted by writing the wrong questions for that day. I was trying to write such that kids learned the “why” for every problem, yet also discovered new skills and original conclusions through problem-solving. I concluded that excellent question writing has four key components:

1. Use data to align the question to the desired standard or outcome. Fundamental, and it was learned in Level 2, but it still reigns supreme here. Alignment is the #1 planning factor affecting growth results. There’s no substitute for seeing the rigor level at which students will be assessed, and then writing questions that shoot past it.

2. Ask why. Since ‘why’ needs to be part of every answer, it should part of most of the better questions. Understanding ‘why’ provides context, purpose, and conceptual depth. Without these, it’s near impossible to come up with an innovative solution or empower people to learn on their own. There is no fundamental understanding without ‘why’.

3. Embed multiple skills into every question. While we break down standards into isolated skills, we should almost never ask about those skills in isolation. Everything has context, and multi-layered questions that embed and require multiple skills should be the norm.

4. Answer and then discuss the answers to your questions with other smart people. This is the most important step, and it’s the only way I’ve found to hold a high standard. If your questions include the features above, they’re going to be complex and more ambiguous than the norm. You’re going to facilitate a class where 100% understanding is an expectation. Is it clear to you what components should be included in the perfect answer for your question or prompt? If not, there’s going to be a lot of difficulty with determining when students have actually hit the standard. This lack of clarity will be the difference between good and great. Student discussions will go a lot of unanticipated ways, and without sufficient exposure to the perfect answer in your own mind, you risk being unequipped to push students far enough in their understanding and can lower expectations without realizing it.

70% of class days were called ‘hot’ prep because kids had plenty of time in advance of class with the material. Such is great for driving deep understanding. The more time students spent preparing for class, the deeper we were able to go with their understanding the next day. In this way, they owned their learning, and the homework was motivating because it was
immediately relevant to the future. While difficult, the problems were also a discovery of sorts because the material hadn’t yet been covered, so there was additional ownership there as well.

But ‘hot’ prep isn’t as effective to develop independent thinking under time pressure. Both depth and pressured decision making are important. That’s why I included more ‘warm’ and ‘cold’ prep in the class mix as the year wore on. This mix is a crucial component of the ultimate result and should always be informed by data. Does the class have good conceptual understanding but suffer from the ability to apply it under time pressure and independently? Then more warm or cold days are in order. Are students having trouble retaining information or providing solid justifications for their reasoning? Then more hot days are in order.

It wasn’t all peaches and cream of course. There were days that kids didn’t prepare as well. My questions missed the mark a lot. We flushed quite a few classes down the tubes throughout the years. However, the point of preparation in support of rigor is the most important of the tenets. And it helps open the doors of higher expectations for understanding in the classroom.

2 - Discussion or Performance-Based Classroom Structure
The rigorous classroom regularly requires students to demonstrate a deep and thorough understanding of material. This means giving the opportunity to communicate that understanding through open-ended means. Deep understanding doesn’t come by practicing problems, reading passages, or answering multiple choice questions. Kids must be expected to engage and given the time and opportunity to do so. The non-rigorous classroom is light on requiring communication. There’s lots of teacher, less student, and even less student to student. In the rigorous classroom, student to student communication is frequently 60% or more of class time.

Nearly a century ago, Phillips Exeter Academy realized that engagement was crucial. After a serious injection of funds, they redesigned every classroom to foster student participation. The faculty was doubled, class sizes were slashed to 15, and every room got a large table around which students would be held accountable to engage. They added Socratic dialogue and a focus on teaching kids how to think as opposed to providing answers. The model is simple and brilliant, persists today, and is called the Harkness method, named for the benefactor who funded the school’s conversion. The method and design also make it such that the teacher can directly monitor student participation at all times because they sit at the same table.

Unfortunately, due to resource requirements, such is not directly replicable across all classrooms in an urban public high school. Class sizes are the obvious issue. There are also some tangible differences with regard to the student body: Exeter is an incredibly selective group, and all are well above grade level. They don’t have to take as much time working on culture and investment. That said, when I saw the school and others like it in person, I knew they had gotten rigor and independent learning right by increasing expectations for engagement.
In calculus, I created six semester-long groups that had 5-7 students in each. I was looking to create a form of similar engagement for a class of nearly 40. I knew that it would be hard for me to effectively monitor the conversations of all the groups, so kids would have to learn without me, and the class design was an iterative one: students were given time to discuss in their group, we’d then come back together as a class, then they returned to their discussion, and finally we’d come back together as a class to wrap up the problem. After some tweaking, the final timing breakdown for a problem went something like 4-5 minutes for the initial small group discussion, 2 minute whole-class, then 2-3 minutes for subsequent small group discussion and whole class iterations – back and forth.

I can’t overstate the amount of time I invested in teaching kids how to have effective discussions and engage each other. Cultural lessons along these lines were given as the teachable moments presented themselves (there weren’t any canned lessons in this regard because learning by doing is more fun), but I’d say I spent upwards of 25-30% of the total course time explicitly modeling and reinforcing the cultural values we talked about in Level 3 above. Sometimes it was as simple as giving them the cultural permission to be professionally angry at someone in the group who hadn’t prepared the night before. They were allowed let them have it via direct feedback. Sometimes, I’d stop group discussions when I heard a great line that I wanted to reinforce. I might overhear something like, “Ok, you’ve said a lot of pieces that aren’t coming together. Now go back and explain to me the whole thing correctly from the start. I’m not sure you know what you’re saying, but you can do it.” Commentary and expectation-setting like this was praised and rewarded, and it helped the cultural dynamic of the group discussion.

I used a heterogeneous, fixed grouping strategy that only changed at one interval throughout the year. To create it, I ranked all kids on their demonstrated ability level. People who I knew were close friends were placed into different groups entirely. It wasn’t just for productivity reasons though. If you can learn to work with and access information from people you don’t know or even like, you’re more empowered to find answers outside the classroom. Within groups, I assigned their seats using ability levels. I knew that even the position in which they sat would affect the nature of the discussion. The group size was 5-7, but I’ll highlight the design of two sample groups of 6 below. Each box represents a seat, and the number is that student’s rank in the class.
As you can see, higher performing students were seated in the middle so they could be more accessible. One set of opposite corners had a pair of middle-performing kids, and the other set of corners had two at the lower end of the class. The groups themselves were not ranked in any way, but the top six kids were in different groups, the bottom six kids were in different groups, etc. Beyond that, I paid close attention to group dynamic when making final decisions, purposely pairing strengths and weaknesses together when near equal ranks dictated more than one possibility for the grouping.

I liked keeping the groups cohesive for a significant portion of the course because it allowed strong relationships to develop. These groups became many students’ primary study groups outside of class because they had a lot of practice working with each other efficiently. This consistency also allowed for a lot of group accountability formats which I liked to use in investment on the cultural side.

I meet teachers who love to change up the class structure every day. They claim it keeps things fresh and interesting. Always sounded like needless work to me. Constant engagement where you’re talking with other people about your understanding is anything but boring. The format doesn’t have to be original. I found a predictable class structure was incredibly empowering. I gave a short quiz at the start of every class so I could keep a pulse on the data. Other than that, the timing structure was the same every day. Kids could focus on the material rather than how to navigate changing class structures. The lack of surprises created opportunity for more depth and greater student ownership. They ran the show. They designed their out-of-class study sessions with the same timing structures. They didn’t need me, and this is exactly what I was going for.

Whatever your class design, a high expectation for engagement is a must in the rigorous classroom. Students must spend a majority of the time interacting directly, have varied prep (hot, warm, and cold), and receive feedback and repeated opportunities to demonstrate their understanding.

**High Quality Student Answers or Performances**

Apart from fostering the right culture, during class, my only job was to be the standard-bearer for answer quality. Doing so taught kids what high quality answers looked like, and therefore, the standard they enforced with each other. During the big group time, I listened like a bat for a response that was complete, entirely accurate, and used all relevant vocabulary for the time provided. I made the choice early in the course to stop students immediately when something was inaccurate, included vague pronouns, or didn’t make sense. I found this to be valuable for two reasons:

1. Letting them continue when something was wrong made it harder for other kids to determine the standard. Is what this kid is saying right? It’s hard to tell for someone that doesn’t know what’s going on, and it only gets more confusing if someone jumps in two minutes later and says, “That thing you said a minute and a half ago was not correct.” Kids (especially those struggling) will not find benefit in letting the conversation go all over the place.

2. It taught the standard to others in the moment. To some degree, kids locked in to every response more closely because they knew if something was off, it was game over. If you were allowed to continue, you knew you were right, so every round was like a, “I wonder if they’ll be able to make it through…” exercise for those listening. Listeners became further invested because they had just spent several minutes discussing this thing themselves, and they started to become better and better and catching inaccuracies on their own. It got to the point where in the second semester, as soon as someone would have an inaccuracy in their response, you’d visually and sometimes audibly see discomfort/disagreement in over 80% of the class as they shifted in their chairs or let out an accidental groan before providing direction to the speaker. I did less and less with time.

Even though it was math class, there were many problems that didn’t have “one right answer” because they asked for students to justify things like conceptual significance (which can go a lot of ways). Nevertheless, all answers were still treated as all right or all wrong based on the logic and vocabulary used in the response. Not everyone had to agree with your response if it was an interpretation, but your answer did have to include consistent logic and thoroughly accurate justification. Big jumps that couldn’t be defended were treated as incorrect. In this way, it was a direct parallel to reading or other classes of similar interpretive nature.
Every response was considered a success if I said absolutely nothing. That was actually the goal. In a perfect class, I would actually use no words. It happened only a few times. To the greatest extent possible, I stayed away from any form of making questions different or easier in the moment. I actually blamed myself if I had to scaffold-down a question in discussion because this means that the problem I had written was poor or inaccessible.

Being the standard-bearer for answer quality empowers students to see and reinforce that standard on their own. In this way, they are best empowered to learn outside the classroom. In teaching them to think, attention to detail in holding that high standard changes good to great.

Rigor Guide Q&A - points for further discussion –

The following questions are posed to provide some guidance regarding decisions to be made within the context of the core tenets. They don’t define the requirements; they are merely suggestions for consideration.

**What is the most important function of the teacher in a discussion-based design?**

Overall, it’s guardian and enforcer of the high standard. At the start, the primary role of the teacher is to author excellent and relevant prompts and then listen like a bat and watch like a hawk for violations of the rigor standard. When one sees or hears them, they should make the right judgment call to address and reinforce.

**What are the three most important decisions a teacher can make in a discussion-based design?**

1) The choice of the prep and temp (hot, warm, cold); 2) the feedback given – who gives it, what it entails, and when; and 3) the accountability for student preparation – made via the class culture, investment, self-efficacy, and group accountability structures that cause students to arrive prepared.

**How does one write excellent questions?**

First, one uses data to align the question topic to the desired standard or outcome. Then, they ask “why”, and embed multiple skills. Finish by answering and discussing the answers to questions to define the appropriate standard to uphold in the classroom.

**What should the teacher do when student responses are incorrect or violate the rigor standard?**

The short answer is that all violations must be addressed by someone, and corrections should be repeated until the standard is met. This question is also a flavor of each of the following: When should the teacher jump in during student or whole class discussions? What frequency of feedback should be offered by the teacher? At what times and in what ways should students be permitted to offer feedback to one another? When should students be asked a different, more accessible question versus just sending them back to their groups to discuss?

The ways in which rigor violations are addressed will to some extent depend on the situation and class design, but there are always higher or lower percentage choices that can be made. The advanced teacher more often makes higher percentage choices than lower percentage ones. A few philosophical guidelines are included to help:

- Repetition is the best rigor “consequence”. Anything worth doing is worth doing well. If it isn’t good enough, provide the reason why and ask that it be done again. Sometimes this will occur after having had the chance to discuss or practice the topic further with others.
- Quality is king. Someone needs to intervene every time a statement is incorrect or unjustified and provide the feedback on why. It can be immediate or after the fact, but generally speaking, more feedback is better than less. It’s always better if students provide it to each other, but even the provider must be held to the highest standard. No one is immune to correction.
• Feedback in the moment is recommended. When provided frequently, feedback can increase class engagement by better training other students to listen at a high level and then continue the interventions on their own. It also helps all students follow along more closely. There’s less confusion when incorrect statements aren’t tacitly accepted as correct through silence.

• Sometimes it will be necessary to ask a different question during a teachable moment. If one has the choice, better to ask a parallel question that’s almost a “metaphorical equivalent” than to ask a question that’s simply easier or circumvents the skill one wants students to acquire.

Should novice or new teachers utilize a discussion-based classroom design?

Yes, if the teacher is part of a school where all classrooms use a discussion-based approach. As the Spark model is a hierarchical one, it does make sense to master some foundational items before moving to more advanced ones. That said, with the support of class consistency across a school, the novice teacher can still focus on these foundational items in the context of a discussion-based design. The nature of the novice teacher’s choices and focus will just be a bit different. They will need to collect data more frequently to ensure their prep questions align well to the desired outcome. During student group discussions, the novice teacher should be a bit more concerned with enforcing that students are on task and participating. They should more often be watching closely for discipline violations than for rigor violations. They should be wary of lowering their awareness to what’s going on in the broader classroom. The novice teacher should continue to prioritize areas of development outlined in the Spark model even while in a discussion-based design.

How much time should be given to whole class versus group discussion time?

Majority in groups due to the higher engagement factor, but it depends on the purpose for which each is used in your class design. While listening to group discussion intently is recommended, on a typical day, whole class discussion can be the primary means of rigor enforcement and redirection. In that way, group discussion is where the work and genesis of ideas occurs, while whole class is the litmus test and redirection time that ensures all groups are collectively making meaningful progress. Given the purpose, it’s a check that’s recommended somewhat often. Some days have longer projects or more engrossing topics requiring extended time, so again, purpose drives the decision.

What is the right mix of hot, warm, and cold prep days or class portions?

The majority should be hot in order to drive depth of understanding, but the ultimate mix depends on the class and their performance data. Does the class have good conceptual understanding but suffer from the ability to apply it under time pressure? Then more warm or cold days are in order. Are students having trouble retaining information or providing solid justifications for their reasoning? Then more hot days are in order. A recommended class mix usually falls around 60-70% hot, 10-30% warm and 10-30% cold depending on the group. The choice of the type of prep and its timing is as significant as the choice of the questions or prompts. It’s a planning choice that should be informed by data to positively affect and predict the desired outcome.

What is the best grouping strategy and how long should student groups remain together?

This is another that’s largely preferential and dependent upon your purpose in grouping. With a strong culture, a relatively larger group can more effectively solve problems without sacrificing engagement or participation. Many prefer heterogeneous groupings for the distributed benefits that come from the student to student education. Taking into account cultural points in terms of diversity and working styles are also helpful when grouping. Finally, many prefer having groups stay together for at least a semester. The consistency and time create lasting bonds that give students a family identity within the larger class.

What amount of guidance should be given to students regarding the discussion they do in groups?

A whole lot. At least 20-30% of the time in a course can involve cultural work related to how students interact with one another in their groups. It’s setting expectations and enforcing expectations over and over again. Culture is a garden that
must always be tended if it’s going to be its most beautiful, and the class culture lives or dies with how students interact with one another. Listening to student group discussions shows how the learning will go outside of class (a necessary component for exceptional growth!). One should use that data to inform what training and structures are provided to students and their discussion groups with the goal of empowering them to meet the rigor standard independently.