

## Fair Grading Transcript

Hi there, my name is Olivia Harper Wilkins, and I'm a fifth year PhD candidate in chemistry. Today I'm going to be talking about fair grading and effective feedback.

So by the end of this video, hopefully you will be able to do the following: differentiate between effective and ineffective greeting and feedback; communicate clear expectations to students; grade consistently and fairly; and provide efficient and effective feedback for students. So the first thing we're going to talk about is differentiating between effective and ineffective grading and feedback.

I'm going to invite you to pause and reflect on the following questions. What are some ways as a student or instructor that you've experienced effective feedback? And what about ineffective feedback? So take a moment, pause the video, and think about these things.

And to share some examples of what other people have shared in the past in terms of both effective and ineffective feedback. So some things that constitute effective feedback are one of the areas for improvement or made clear.

When the origin of errors are diagnosed or when problems are deconstructed. If you have a problem set and one of the problems has a wrong answer, just marking the answer wrong isn't going to be helpful. What's more helpful is showing students where they went wrong, is it that they introduced negative sign when they shouldn't have? Is it that they multiplied or divided incorrectly? Something like that. It's good to point out, or maybe they just don't understand the concept at all.

There's also positive reinforcement. So if students are doing good things you want them to keep doing it. And it's good to point that out.

If someone is really good at reading abstracts tell them that they're good at writing abstracts and explain why they're good at writing abstracts so that they remember that and move forward doing that and so that they don't pick up any bad habits and undo this this good work that they've done so far. It's also effective when students feel encouraged.

Let your students know that you want them to do well and that you believe in them and they're probably going to do much better. And it's also important that effective feedback is timely. If you wait to give all of your feedback until the end term then students can incorporate it into subsequent assignments and that's not really helpful. So some examples of ineffective feedback or when you just write, "No," or "See solutions," or "What were you thinking?" Even if you're thinking these things, not the best thing to write down on a student's paper.

If students can't read what you wrote, that's also not effective, they won't get the message. If you score something even if you're using a rubric, but there's no rationale. If you say something is worth up to five points, and you just give them three points, students might not know why

they only got three points. What did they do well enough to get three points, but not well enough to get the full five? It's important to share that.

And then if you have too many comments (this is something that I struggle with), that's just overwhelming. So try to think about no more than three big things that you want students to take away. Maybe there's more than three things or whatever number you want to choose that students need to improve on, but just focus, piece by piece. So for instance if students have a hard time organizing the writing. You don't want to be focusing on the grammar; solve the bigger problems first and, you know, leave the grammar for a next draft.

And then ineffective feedback is also when it's difficult to decipher tone. So if students feel like you're disappointed in them, you know, that's not good. Think about when you're reading an email versus talking to someone in person. Sometimes even if you know them really well, it's hard to tell what they're thinking.

Similarly, unless students know you really well, it might be hard to decipher the tone from your written comments. So consider that.

): Next we're going to move on to communicating clear expectations to students. We're going to consider an assignment and the assignment is this: (It's for a laboratory class.) Write a full report on experiment one. Include an abstract, introduction, methods, results, and discussion and conclusion. You will be graded out of 100 points. Due Friday.

This may seem like a pretty good assignment. It lays out what pieces should be included. But there's still some things that are lacking especially if this is for an introductory course or if you have students who have written lab reports for other classes where the expectations might have been different, or if this is someone who is a non-major.

So some questions that someone might have either consciously or subconsciously while they're reading this assignment prompt is 'What does a report entail in terms of things like formality writing style and general structure? Am I allowed to say we did this or do I have to use just passive voice?' Students might not know what those expectations are. Furthermore, what types of information going to each of these sections? This is especially problematic for things like if you're separating out the results and discussion. Sometimes it's hard to know how you separate out those things. Do you write down every single thing you did in the methods, or is it just the big overarching steps? Students who aren't familiar with research reports or lab reports might not know what exactly goes into these things.

And then another question is how will these points be allotted? How should a student prioritize their time? The reality is that students won't be able to give or not all students will be able to prioritize the assignment. They might have to prioritize other assignments. They might just not be willing to prioritize the assignments. So how should they focus their energy? What are the things that you value most in this assignment? You know you probably don't want them to spend 50% of their time proofreading for grammar and mechanics, and if you do, then make 50

points worth be allotted to grammar and mechanics. But if not, let students know that by saying grammar mechanics five points or something like that.

With those questions in mind or any other questions that you might have thought of, I want you to take a moment to pause and reflect and think how might we improve the assignment description.

I'm not going to give you examples of how I would improve this assignment. Instead, I'm going to talk a little bit about transparent teaching.

Transparent teaching is essentially making implicit expectations explicit, and this is something that's been shared to significantly improve student learning and grades and helps everyone, but it especially helps students from disadvantaged or underprivileged backgrounds. So not everyone is going to come into your classroom, knowing that they should cite their resources that they should use a certain tense or that they should use a certain format. Anytime that you have expectations that you think everyone should know, think again and perhaps just tell students.

Take a few moments to just write it all out and let them know exactly what you're expecting. When you're designing assignments, you should be communicating the following. Consider communicating the purpose of the assignment. What skills will students practice or what should they be practicing? What knowledge will they gain? Help them see the connections between what they're doing and the concepts in class so that they have a better appreciation and motivation for the content.

But this first piece this what skills should students be practicing is especially important if you have people who aren't going to be going into the field that the course is in. And so if for a lab report, for instance, you have people who aren't going to be going into research, why should they be writing a lab report? Why should they care about this? Think about the skills that they'll be learning that could be applied to any career or any field. You should also list the tasks at hand. So what are students actually doing? If it's writing a lab report, that might be a little bit more obvious, but sometimes like, if you are expecting students to be submitting an outline and a lab report and, like, an annotated bibliography or something, tell students and don't assume that that's just expected or known. So what steps should be followed? Is there a specific format or workflow that should be employed? If there's a specific format that's used in your field, especially if students are out of field they might not know that, so you should tell them what you're expecting.

And then finally, criteria for success should be included. So what does excellence look like? This could be showing examples of good work. That could be answer keys for similar problems, some sample lab reports, or sample presentations. It's important that if you're sharing previous students' work that you get their permission and, if necessary, also redact any personal information.

You can also list expectations so that students can focus on higher order concerns, things like content and understanding. Make sure that students aren't spending a lot of their time wondering what format for citations should they be using, And make sure that they're using their time and energy to think about things like content and understanding. So try not to leave room for them to think about these sorts of things.

Okay, next we're going to talk about grading consistently and fairly.

Let's consider this question: Find  $y$  for  $x = 3$  when  $4 = 3x - 1$ , and this is a problem that, on our problem set, is worth four points.

The answer is  $y = 2$ . I'm going to give you four examples of student responses:

Student 1 just writes,  $y = 2$ , which is the correct answer, but there's no work shown.

Student 2 does something similar, except in addition to the correct answer, they have code attached.

Student 3 starts out strong and has the correct process until they get to  $4y = 8$ . They show their work, but instead of dividing both sides by 4 to get  $y = 2$ , they multiply the right side by 4 to get  $y = 32$ .

And then student 4 shows this plot, which is for  $y = 3x - 1$ .

So take a moment to think about how you would grade these responses. There's a Google form that I encourage you to go to, and you can select how you would grade each of these students. [Google form at <https://forms.gle/zwhc3MqvkfQhsCtcA>]

And at the end, you can click "show responses," and you can see the distribution of how your peers have graded these responses. You can also, if you don't feel like typing in this Google Form URL, you can also scan the QR code below.

Okay, if you didn't get a chance to fill out this form, I'm going to share the initial distribution of points assigned, just so you can get a sense for how much spread there can be when grading assignments like this. So here are the four students and you can see that with 17 respondents, there's a wide spread. So like there isn't really a place where the grading is totally consistent. So this is important to keep in mind is that when you have multiple graders, either for different sections of a class or different TAs that the grading styles might be completely different. It's hard to be fair, perhaps.

So now consider how would you grade these students if you were given this rubric instead. So you have four points. There's one point each for the following criteria: the student answers the question; they provide the correct answer; they show the work; and that the work is of quality and it's clear. So if you were given this rubric, how would you change how you graded the students, if at all? Did you already form a similar rubric in your mind? Or will this completely change how you grade the students?

We're going to talk a little bit more about rubrics in case there's something that you're not really familiar with, or in case you need a refresher. Rubrics are a tool for consistent grading

and they're helpful for both students as well as instructors. For students, if a rubric has given before due date it can help students focus on important content. So this is an example of transparent teaching, giving rubrics out before due date. If rubrics are returned with graded assignments, then they can help break down areas of improvement in a way that is organized. So instead of having written comments all over the place, this is a way that students can easily identify themes for things that they did well or for places where they need to improve. And according to education research, there are also benefits like increased grades, increased class participation, and increased understanding of the material.

This is not surprising because of students are spending their time and energy on actually producing quality work instead of like doing the wrong assignment or trying to figure out your expectations (and perhaps they don't feel comfortable asking you to be more explicit)... if they're spending more time actually doing the quality work, they're going to be performing better in your class. And then there are some benefits for the instructor or TA. So this is a way to be consistent and reliable. This is especially true if you're grading things over a period of time, or if you have multiple graders and this can also make for faster and less stressful grading. So even though making a rubric might take some energy up front, in the long run it probably will save you time because you can kind of.... You might not have to pay as much attention and you can kind of skim over some of the work. Like you might not have to read every single line of code. For instance, you may just have to look for the key points, so it can save you time in the long run.

In designing rubrics. There are three steps you select criteria you develop a skill you assign points. If we think about, for instance, giving a student presentation, One of the criteria that you might have is eye contact. So consider the purpose of the assignment. Perhaps for this assignment you want students to get experience of good etiquette while public speaking and think of the content and style categories. Perhaps you know you want most of your points to be focused on content, but maybe you do care about style like what format are they using? Do they stick within the time limit? Those types of things. Anything that you want to incentivize students to comply with, throw a couple points at it. Sometimes I will also add logistical things like if you submit your presentation slides to me before class so that I've time to download them to my computer so that it's up and ready to go, you get five points. At a minimum, you have five points. So these are some things that you can do.

Then you want to develop a scale. There are a couple different types of skills that you can use. One could be a binary where you have a yes/no or present/absent, and this is something that is quite objective. And then you can have something that's a little bit more subjective; if you have a multi-level scale there's some more detail. And you know, this isn't just whether something is present or absent, it's also like to what degree is it present or absent.

We're thinking about eye contact. This could range from "no contact, read directly from slides" to "eye contact with multiple people throughout" and then you'd have some intermediates in the middle.

And then finally, you want to assign points. You assign points for each level, and you don't need to distribute points evenly. So if you really wanted to, you could make this worth 10 points instead of four and you could like... it doesn't have to be a linear scale. Maybe you have something that's more exponential or something where like it's a lot easier to get more points than it is to get fewer points. So, and, of course unless we're playing golf, if something's more important, you want it to be worth more points. One simple way to assign points here is simply 0, 1, 2, 3 points but again you could make this one a range from 0 to 10 points and you can just divvy it up however you think meets your learning goals the most appropriate way.

So we're going to take some time to pause and reflect and think about an assignment that you might be giving in a class that you're teaching or think of an assignment that you've had as a student in the past where there wasn't a rubric, and develop part of a rubric. Think of one criterion. Think of the scale that you would use, whether it's multi-level scale or binary, and then think about the point allotments. So go ahead and pause the video and take some moments to think about this or write it down.

Next, I'm going to give you some tips for grading with rubrics. So after you've created the first few assignments revise your rubric. If you realize that your rubric just isn't working for you, or you don't agree with the points you assigned after you actually test it out, that's totally fine. Go ahead and regrade that work with your new rubric. Try to aim to spend equal time on each piece of work. Grade a single problem across all assignments instead of grading each assignment in series. So grade problem 1 for all students, and then take a break! Then grade problem 2 for all students and take a break. So this can help you be more consistent and less likely to introduce subjectivity into your grading.

Use the rubric as a marketing tool, return it with the graded assignment. So again, this is an example of transparent teaching. Take breaks so you make fewer mistakes, especially if you have a lot of things to grade. You want to make sure that you're coming at each assignment with about the same level of energy to be more fair.

Okay, so for the last part of this video we're going to talk about providing efficient and effective feedback for students. So what is effective feedback? Effective feedback is understandable and accessible. You want there to be enough feedback that is useful. But again, you don't want there to be so much that it's overwhelming. And then you also want feedback to be legible, coherent. If you have specific markings that you use that aren't commonly known or, you know, even if they are commonly known, provide some kind of legend or marking key. This can be especially helpful for students who may come from different backgrounds, perhaps international students, who might not be familiar with your marking key. You also want to be constructive; effective feedback balances positive and negative. Again, you want to be reinforcing these good behaviors or these good approaches to work, but you also want to be encouraging your students, so make sure you're not just telling students where they need to improve, but where they've done especially well. And focus on the action and not the person. Don't say something like, "You're bad at writing." That's really hurtful and it's not really constructive at all. So focus on the action. So maybe say, like, "I think this paragraph would

benefit from there being a transition here," or something like that. Focus on the action, not the person. Make sure that your feedback can be easily incorporated, so timeliness is important as well as directing the future efforts so you know, if you're waiting until the end of term to give feedback on everything, that doesn't really help for subsequent assignments, but also tell students what you want them to focus on their next assignment.

If someone didn't do so hot with a transitions in their first paper, say, "For your next paper, I'd like you to focus on transitions," for example. And help them clearly identify where they should focus their efforts. Some different methods of effective feedback (some of these we've already gone over) are rubrics, having model answers, having shorthand guides, directed feedback (so writing your student a quick note to say, "Hey, this is what you did well, this is where you could improve. If you have questions come to my office hours." Just a nice little personalized note), and, if you notice that people across the board are having the same mistakes or you're seeing places of misunderstanding, send an email to the entire class: just give some general commentary and say, "Hey, I noticed that a lot of people messed up on this. So, here you go. Here's what you should be thinking."

And this is beneficial for a couple reasons. One, you don't have to write the same comment over and over again but two, it lets students know that they're not alone in that mistake so that can also help, if not boost their confidence, not make them feel less confident.

We're going to do another pause and reflect exercise. Think back to that grading exercise we did earlier with the  $4y = 3x - 1$ . So if you were to grade that now would you only provide a raw score would you correct students mistakes or indicate where they went wrong. How would you indicate what was wrong? Would you circle a wrong answer? Would you strike through? What color pen would you use? (I'm quite a fan of using green pen.) Would you leave any written comments to explain the issue in more detail? And would your answers to these questions depend on the situation, and what factors would go into your approach? So does it depend on whether you're teaching an introductory class versus an upper-level class? Does it depend on whether this is a class for majors or not? Does it depend on whether it's a small intimate class or whether it's a large, like dozens of students, class? Think about how your feedback and grading might change to be student-centered.

Some common questions and challenges that come up in terms of grading and effective feedback, just to give you a head's up, are questions like: How will this be graded? If someone doesn't show work and they don't get full points, they might ask, "My answer's correct. Why didn't I get full points?" Sometimes people will say, "I think I should have gotten points for this." And maybe they have a partially correct answer, but they don't have full a correct answer. Some other comments are, "My friend didn't lose points for this," or "I didn't lose points last time." Am I allowed to use the internet or other resources on this assignment? I highly encourage you to have a collaboration policy or resource policy in your syllabus for a class.

I didn't understand what I was supposed to do. So this is where transparent teaching can come in handy because you can explicitly tell people what they were supposed to do. And of course,

let them know that if they have questions they should ask you. And then you might also be asked, "Can I still get an A in the class?" "How badly will this hurt my final grade?"

It can be helpful to think about how you might approach these situations ahead of time if you think they might come up. So some best practices are: Communicate clear expectations; be consistent in grading (so do things like use rubrics); and give constructive and informative feedback. After this video. The next steps if you're looking for resources on teaching remotely visit [teach.caltech.edu](http://teach.caltech.edu) and then if you're going to be remote learning and you want some more resources, head over to [learn.caltech.edu](http://learn.caltech.edu) and also feel free to share that link with your own students so they can use these resources as well. So thank you very much for tuning in.

And happy teaching!