Ungrading for Cartographic Education: Reflections from Small Undergraduate Classes

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Conventional grading has been shown to be fraught with problems. For one, it thwarts intrinsic motivation to learn in favor of motivation to simply earn a score (Blum 2020). It also exacerbates structural discrimination, having been shown to be biased in terms of race and class (Shelton and Razi 2021). Moreover, even when instructors provide detailed feedback alongside grades, research shows that students tend to look only at the grades and ignore the feedback (Blum 2020).

One alternative to conventional grading is *ungrading*. When ungrading is used in a traditional college or university setting, students do still receive final grades. However, the focus throughout the semester is on formative feedback: feedback on maps that is both present- and forward-looking. It is intended to be helpful for reflecting on an existing map as a draft, as well as for revising it and for making later maps (this contrasts with summative feedback, which is on a final draft). Instructors will give this feedback, but not points or letter grades. Ungrading creates a supportive learning environment which encourages the development of metacognition, or reflection on learning. Students are asked to reflect on their strengths, interests, and areas for improvement, and to develop plans to improve and grow throughout the semester. As a result and despite its name, ungrading is not simply a lack of grades. Rather, it is a different system—one that has been found to address the above problems, among others (Blum 2020; Stommel 2020).

This paper outlines the hows and whys of ungrading, as I've practiced it in the cartography classroom. What I offer here are anecdotal reflections from two semesters of using ungrading in cartography-oriented mapping classes. I write "cartography-oriented," because neither was only about cartography, although cartography was a major theme. In the first course, "Theory and Technology of Maps," at Tufts University, students came in with no significant cartographic training at the college level, although all of them were certainly map enthusiasts. The second course was "Critical Cartography and Environmental Social Movements," at Smith College. Students in this course had either taken a semester-long GIS course or had other GIS experience, but this prior training or experience did not emphasize cartography. Each course met twice a week for 75 minutes. One day per week was devoted to interactive lectures and discussions about critical approaches: counter-cartography, feminist cartography, inclusive design, and more. The second day each week was mapmaking. In the first class, we primarily used ArcMap. In the second, we used ArcGIS Pro and Adobe Illustrator. With the exception of short reflections, the assignments were all about mapmaking: students made five maps in each.

In the weeks leading up to teaching Theory and Technology of Maps, I was introduced to ungrading during a late-night conversation about pedagogy. The practice seemed compelling, and I saw several potential advantages for using it in a cartography class—advantages which, since teaching that course, have been proven and ultimately inspired this paper. So, I pitched the idea to my students. Although I was new to ungrading,[1] I decided to poll the students: were they up for trying it? I handed out quarter-sheets of paper and asked them to write a few sentences on their thoughts and feelings about the possibility. This exercise also included asking them to discuss

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1. Including the name. I use the word "ungrading" throughout this paper for the sake of consistency, but the first semester I just talked about it as "feedback instead of grades." Months after the class ended, I learned that there was a name for it. And while I've pointed out that ungrading is more than not grading, the simplicity of the word and the common language it offers is, for me, a compelling reason to use the term.

whether they wanted to do a mid-semester one-on-one check in to mitigate grade-related anxiety. The mid-semester check-in was initially my own idea, though I later learned that it is common in ungrading for a variety of reasons (Stommel 2020). Student responses were handwritten without names, making them confidential but not fully anonymous. I had promised that if anyone strongly objected, we wouldn't go ahead with ungrading, but the results of the poll showed that everyone was either in favor of or neutral to the practice. For Critical Cartography and Environmental Social Movements, I made the choice to go ahead with ungrading without polling students, as at that point I had ungraded several other classes.

In the following sections, I discuss how ungrading works in my cartography classrooms. I then discuss what, in my experience, are its advantages for teaching cartography. Skeptics of ungrading may want to skip ahead to the why—the discussion of ungrading's advantages—before reading the how sections. That said, ungrading as I practiced it is likely not perfectly transposable to all cartography classrooms. Toward the end, therefore, I reflect on some practical and potential limits to ungrading for cartographic education, and potential workarounds or alternatives. Throughout the paper, I alternate between discussing each of the two classes without specifying which, unless there is a comparison or lesson learned in between that I want to point out.

HOW: INSTRUCTOR AND PEER FEEDBACK

ONE OF THE MOST IMPORTANT PIECES of ungrading is feedback, given to students throughout the semester. For simple maps and shorter activities (e.g., a projections activity and a book report on an atlas), I provided formative feedback on the final product. For longer activities (e.g., maps that were more time-consuming for students to create), I gave them feedback on intermediate drafts as well as the final version. In the first course, formative feedback was intended to inform their subsequent assignments. In the second course, students integrated their feedback into both their later maps and their final portfolios. Final portfolios were revisions of all their previous maps.

In my comments, I distinguished formative feedback that was more normative (e.g., missing classes in a choropleth legend, label placement that was unclear, or an accessibility issue with text or color) from that which was more subjective (e.g., using a specific color palette that I liked, adding a particular callout or inset, adding a watercolor texture). Of course, to some extent, all feedback on maps is subjective (Huffman 2018; see also Blum 2020). Given that, I tried to make clear that they should *probably* address all of the more normative suggestions, unless they had a good reason not to, but that the others were ideas I was recommending based on my experience and preferences. In addition to making clear that they should prioritize the normative feedback in their revisions and future maps, I made this distinction to model to students how *they* could give feedback. Even before they knew cartographic norms and techniques, they would still have their

own perspective and subjective preferences to draw from. Of course, as the class went on, they would also be able to offer more feedback in terms of cartographic norms.

In addition to formative feedback from me, both classes included peer feedback. Peer feedback carried the same importance as my comments did in terms of the students' growth as cartographers. I gave them some guidance on giving feedback, in terms of the normative and subjective distinction I mentioned above. I also suggested that they start with what are known as feedback "sandwiches"—a technique in which more critical feedback is sandwiched in between more positive feedback, while also emphasizing that positive feedback should be relatively specific (e.g., "I like how this river label follows the curve" rather than "I like your text"). We devoted one whole class session and several partial class sessions to peer feedback, in which everyone would look at and comment on each other's maps—usually printouts, but sometimes we just walked around and looked at each other's screens. Most peer feedback occurred before the final versions of the maps were due, giving recipients time to incorporate it. As early as the second map assignment, students' suggestions included normative comments along the lines of what I would have noted, as well as subjective ideas that only partly overlapped with my own. Additionally, by seeing one another's maps, students were able to recognize that others were facing similar challenges and addressing them differently. The second map assignment, for instance, was to create a locator map associated with an environmental

justice organization's work, primarily using Natural Earth data. Students struggled with wanting to find and add more data layers—which can be a huge rabbit hole to fall into! However, when they saw that one student had instead added callouts about their organization, and another had used visual hierarchy to emphasize relevant features (e.g., water, specific towns), their anxiety about needing "more data" was assuaged: many copied one another, in the best way.

HOW: SELF EVALUATIONS AND MINI-CONFERENCES

A second major feature of my version of ungrading was the self-evaluation. Self-evaluations were accompanied by one-on-one mini-conferences.

The first time I taught with ungrading, students were asked to reflect on the following questions at the middle and end of the semester:

1. What's working?

2. What's not working?

3. What do you want to make sure we cover in the rest of the semester? (mid-semester)
   Is there something we didn't cover that you are wondering about? (end of semester)

4. What grade would you give yourself at this point in the semester, and why?

The second time I taught cartography with ungrading, I continued to use my original third and fourth questions, but I also took inspiration from Jesse Stommel's mid-semester and end-of-semester questionnaires (Stommel 2020) to create an online form that expanded the first two questions as follows:

1. What aspects of the course have been the most successful for you so far? Is there something that you've done or learned of which you are especially proud? If so, what is it?

2. In what areas (assignments, readings, etc.) have you struggled? How so?

3. How do you want to improve in the rest of the semester?

4. What are you most excited about for the rest of the semester?

The end-of-semester questions were similar, but I asked for more of a retrospective reflection, in addition to asking them to assign themselves a grade:

1. Write a short (~1 paragraph) reflection on your work in this class, using specific examples. Consider the labs; the final portfolio; your participation; the peer reviews offered and received; course objectives; your progress since the first evaluation; and your own goals as a student. This can be in the form of bullet points or a narrative.

2. What are you especially proud of (a map or anything else)?

3. Is there anything you think you should have done differently?

4. What skills do you want to continue improving on?

In both classes, students signed up for a 10–20 minute mini-conference timeslot to talk with me about their answers to the questions and generally check in about the semester. Mini-conferences were partly a grading check in, given that we were part of institutions in which they would ultimately be graded, and grades were important to many[2] of them. In the grading part of the discussion, I expected to and most often did see evidence presented for why the student self-assigned the grade they did. Evidence could be directly from the rubrics, the student's application of formative feedback into revisions or later maps, their participation, or from something else in the class. We would discuss this, along with discussing areas in which they excelled and in which they should improve—in short,

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2. I write "many" but not "all" because some students said that they didn't care very much about their grades. This likely went alongside the assumption that they would pass the course, based on my feedback and their self-assessment thus far and the work they seemed prepared to put into the rest of the course. However, I take it as a signal that the exact grades mattered significantly less to at least a few students.

turning the results of their formative feedback and their work based on it into summative feedback.

However, most of the conversation was devoted to discussing in more detail what they thought was working for them and where they were struggling. In many of the mini-conferences, part of what I did was simply validate their struggles—e.g., that Illustrator takes time to learn, but that they were improving, and that sharing one's work with others is hard but rewarding for everyone. I offered suggestions for working through roadblocks and sometimes went over technical issues with the software. I also took many of their suggestions and requests, such as when one student asked for an Illustrator "cheat sheet" of common tasks. More peer feedback was also a student request.

While I had planned to include peer feedback in a few class sessions, as discussed above, many students mentioned finding it challenging but useful and wanted to do more of it. In the second half of the semester, I therefore added peer review to more class sessions than originally planned.

The end-of-semester mini-conferences also allowed us to talk about cartography resources beyond the class. With some students, I talked about other courses or about NACIS. Others, especially those who were graduating, were interested in free and open-source software once they left the university (I mostly pointed them toward QGIS, but also mentioned Inkscape).

WHY: ADVANTAGES OF UNGRADING

INSTRUCTORS AND STUDENTS have seen many benefits of ungrading (e.g., Blum 2020). In my experience, ungrading has four specific benefits for the cartography classroom. It encourages student agency, promotes thoughtful risk-taking, promotes technical community care, and can contribute to dismantling imposter syndrome.

First, ungrading provides structures that give students agency over their learning, ones that are not always present in other systems. Multiple pathways to success are built in: students can set their own priorities and self-assess based on them (and when writing their self-evaluations, as long as they offer good reason for their assessment, it is acceptable). This gives students more agency over what is important to them. Several students were interested in maps that looked like they had been created with watercolor paints, for instance, and each came up with different ways to implement them (one student scanned in pages she had painted by hand; others used Illustrator entirely). This sort of independence could be accomplished with open-ended assignments, flexible rubrics, different options for earning points, or other pedagogical techniques, but with ungrading, student agency is built in. Likewise, ungrading creates space for recognizing students' knowledge and experience. Some students came in with graphic design experience that they were easily able to apply to map design; others were good at troubleshooting software; and everyone had different stylistic preferences and cartographic interests. With ungrading, students are encouraged to build on and share this knowledge and follow their interests, rather than being treated as identical blank slates to be filled with

knowledge (the latter is often called the "banking model" of education; Freire 1970; Blum 2020).

Second, ungrading allowed students to take cartographic risks and have their intentions validated. One student, in thinking about the hegemonic legacies of cartography and GIS, asked "Should we make ugly maps?" and experimented with this. Another student told me that the map of a South American country they submitted was incorrectly centered. The student told me, and I confirmed that they had re-centered the map for their final portfolio. That candor is enabled by ungrading. Another student turned in a map with a lot of red squiggles that I couldn't read. During a workshopping session, she said that it was in 1.5pt font and was to tell a story about colonialism. We were able to workshop her idea and desired message, changing the page dimension requirements and adding an inset to enable her to effectively communicate her design. In this way, ungrading created space for recognizing the difference between intention and actuality, and better bridging the two.

Third, ungrading promoted what I call technical community care: students supported one another in learning the software and making their maps. As mentioned in my discussion of feedback, I encouraged students to copy techniques and ask each other about their design processes. Technical community care therefore emerged from this process of sharing maps with one another and giving and receiving feedback. During the first check-in, many students reported being anxious about this, but excited to see

each other's maps. They found validation in seeing others having the same struggles they had, visibly and verbally appreciating how their peers had found such different solutions to the same struggles. By the second check-in, many reported that looking at each other's maps and giving and receiving feedback were among their favorite things about the class. Especially in the pandemic age, where feelings of isolation linger and students struggle with internalizing and mobilizing information, this technical community care was not only technically productive in terms of students creating better maps, but also developmentally productive, by promoting a reparative culture. The first course was in the spring of 2020, which meant that the second half was online. The second course was in the spring of 2022 and almost entirely in person, but during a semester in which ongoing pandemic-related mental health struggles were widespread. As with the benefit of student agency, technical community care is something that could be incidentally common in other types of courses—particularly those that include collaborative or creative assignments. However, again, the peer feedback sessions and

orientation away from competitive grading created structures to particularly encourage it.

Fourth, skeptics of ungrading speculate that students will simply give themselves "A"s and slack off. In a few cases, I have indeed assigned students lower grades than the student indicated that they would give themselves, but never by more than a letter.[3] More frequently, students graded themselves more harshly than I would have, and the "grades" part of the mid- and end of semester conversations were opportunities to dismantle imposter syndrome. This was particularly the case for female, nonbinary, and working-class students. In these cases, I gave students grades that were higher than those they had suggested—usually by a half letter. In both cases, these grades discussions were a small part of our mid- and end of semester conversations. At the same time, my summative perspective on their work was scaffolded into these conversations, so that by the time we got to the grades part, it was hopefully apparent that the student's grade should be somewhat different than what they had suggested.

LIMITATIONS AND CHALLENGES OF UNGRADING

Based on my experience with ungrading in these two classes, three challenges emerged. First, there is a level of time commitment. Core to my ungrading practice were one-on-one mini-conferences with each student. This was especially feasible because my classes were small: each had fewer than 15 students. These one-on-one conversations could become unwieldy in terms of instructor labor with large class sizes or high teaching loads. In some of these cases, I could see including the self-evaluations but skipping the one-on-one conversations as being a reasonable solution, one that has been implemented by other ungraders who teach large classes (e.g., Stommel 2020). Other forms of alternative grading could also work (Blum 2020). Standards-based grading, for example, entails assessing student work based on the extent to which it meets specific course-long standards. Students can expect that their earlier attempts at certain standards will be less successful, but that as the semester progresses, they will improve. While standards-based grading does not emphasize metacognition or student agency to the same extent

as ungrading, it still makes feedback and assessment more meaningful and oriented toward learning (for more information on standards based grading and other forms of alternative grading, see David Clark and Robert Talbert's *Grading for Growth* blog at **gradingforgrowth.com**).

A second challenge is that ungrading, as with other pedagogies designed to democratize the classroom, can be emotionally draining for instructors. Mini-conferences encourage relationship-building with students, which can lead to instructors doing more emotional labor. For example, in developing metacognition, students identified and shared the struggles that prevented them from finding focused time to work on their maps. While developing metacognition is excellent for a learner, talking through and, when possible, working through barriers to learning can be exhausting. It can also disproportionately impact instructors of color, instructors who are not men, and contingent faculty (Pittman and Tobin 2022). While I was happy to support my students' growth as cartographers

3. Again, this was rare. I would say that it happened about as often as students disagreed with me about grades in traditionally graded classrooms. When it did happen, I made sure the evidence for suggesting a lower grade was scaffolded into the rest of our conversation. For example, if a student and I had agreed that their mid-semester grade was a B but that they had assigned themselves an A at the end of the semester, I would remind them of the mid-semester grade and note that their work had not improved per normative feedback they had received. I would also remind them that a B was still good, and that if they had evidence that I hadn't considered about their improvement or their work, I would be happy to hear it and reconsider their suggested grade. However, no student took me up on this, and instead they would accept my suggestion of their final grade.

and as people, and overjoyed to witness this growth, I also wished and still wish that that work was more equitably distributed.

A third challenge for me was that it was challenging to communicate to students and colleagues specifically what ungrading involves and what are its goals. In another class in which I used ungrading, I learned that one student thought I was grading assignments but just not sharing those grades. Likewise, fellow instructors often ask me how I am assessing students if I am not giving grades—as though assessment were the main point of education. As I have mentioned, ungrading is not simply a matter of withholding grades for most of the semester. It is also a reorientation away from grades and toward learning, through centering feedback and activities that ask students to reflect on their learning. In the second course, especially, I gave time in class and space in course materials to emphasizing this, and to helping students reorient themselves.

When I provide feedback, for example, I am not thinking "this is an A map relative to others in the class" or "this projection issue makes the map lose ten percent." Rather, I am thinking: how does this map meet or not meet the requirements and learning objectives of the assignment, as introduced to the students? Could anything be better executed? What is especially exciting about this map? What design techniques, based on this map and the student's interests, might they be interested in when they revise or make their next map? But I am not thinking about how any of this translates into a grade, and when I started ungrading, I had to rewrite my assignments and recalibrate the feedback I give to emphasize learning more than grades. This mental reorientation takes significant work on the part of the instructor—to get over our own training in order to not think in terms of grades, to communicate to students that they are there to learn, and to give students tools with which to disentangle grades and learning.

CONCLUSION

I INCLUDED THE PRECEDING SECTION in part to recognize that ungrading is not a panacea; it has real challenges. However, one way to address some of them is for more instructors to take up ungrading! Doing so could normalize the practice for instructors and students. It could also contribute to the intellectual community about ungrading and alternative grading in cartography.

Moreover, these challenges and limitations do not negate the real advantages of ungrading—both as I have described it for cartographic education and as others have in many other fields. Almost all of my students seemed

incredibly intrinsically motivated, even as other instructors around me told stories of high percentages of their students not showing up to class and being unable to complete much of their work (as a reminder, I taught ungraded cartography during the COVID-19 pandemic). They reflected on and set their own priorities as learners and creators, took risks, practiced technical community care, and made great maps. I hope readers will consider trying one or more of the practices I've described—whether fully switching to ungrading for a semester, including ungraded assignments, or simply adding more peer feedback or self-assessments.

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