

Pedagogy Technique: Argument Repair

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One important goal in the ethics classroom is for students to have an open-minded relationship to ethical positions (both their own views and those that they've newly encountered). We don't want students to automatically assume that an initial ethical position is Definitely Correct, just because it seems right at first glance. But neither do we want students—if they realize the view has limitations or faults—to throw the view out without further consideration. After all, there might be something salvageable or worth adapting from that view. In ethics, we describe the work we should be doing as **argument repair**: to recognize that an initial view might require revision, and to learn how to make it a better version of itself.

In my classroom, I frame the work of ethics students as moving our thinking from 'early drafts' to better or more sophisticated views. (I explicitly use the language of "drafts", to make sure that students are willing to revise their views when appropriate, rather than assuming that what they said at first is their final or best answer). We want students to be ready to edit and 'build a better version' of draft positions, whether on their own behalf or on the behalf of others.

Students also encounter ethical views that belong to others—ones that may not convince them, or that they explicitly disagree with. Even in those cases, however, it's best for students to help their 'opponents' construct better versions of their views. Doing so helps students to develop important intellectual virtues like using the *principle of charity*—the willingness to accept that a person you disagree with is reasonable, to aim to understand their reasons, and to recognize if anything they have to say might convince us to modify your own views in turn.

Done well, argument repair is a cooperative method of engaging with ethics. It allows us to avoid some of the problems with adversarial forms of ethical debate — more competitive students might otherwise aim to 'win' (and to wrongly think that they're 'winning' because they're louder or apparently more confident than others in the room), rather than trying to get to better answers. To succeed at argument repair, students have to supply *reasons* for a needed revision on behalf of their opponent, rather than just to assert "I disagree" or "I don't like that view".

As a bonus, argument repair doesn't position teachers as experts in the room who impose their views from a position of power. (This can be particularly helpful when we're engaged with ethical questions that can be fraught or controversial.) Instead, teachers can frame themselves as collaborators in the work of repair. For example, instead of the teacher saying "I disagree" (which might cause students to shift their views to agree with their teacher or to feel an adversarial relationship), they can say something like, "someone who disagrees with you might say..." or "what might someone else say?"

So how does argument repair work in a CS context? My colleagues tested out an argument repair exercise in their AP Computer Science class. Students were engaged in a project in which they had to code a simple spell-checker, which uses a list of ‘correctly spelled words’ (referred to as the CorrectList) and a spell-checker design that can catch certain kinds of errors based upon permutations of an input word. So, for example, given an input word of “probabyl”, their spell-checker can generate various kinds of permutations (adding a letter, removing a letter, swapping letters, etc.) and checking to see if any permutations (such as “probably”) pop up on the CorrectList.

Learn More: [Teaching Ethics with Arrays and Strings: Spell-Checker Assignment](#)

One of my colleagues’ goals was to have students think critically about how the spell-checker works. Students realized quickly that such a spellchecker would be liable to some false positives (words on the CorrectList that are not the correct word for the sentence, e.g., “gold” when “golf” is the intended word) and some false negatives (e.g., slang or colloquialisms that aren’t on their CorrectList).

We hoped that students would recognize that the false negatives would not *all* be instances where the person just isn’t using “proper English words”. Instead, students could and should question the *authority* of the list of “correctly-spelled words”.

After all, their CorrectList could have limitations depending upon the source—for example, if their CorrectList was sourced from a famous work of literature in public domain, that would mean that their spellchecker would only confirm words from (a) a book not under copyright (so the CorrectList may miss out on some contemporary terms), and (b) the kinds of book that we tend to count as “literature”. Then, their CorrectList would require the same kind of [conversation](#) that our colleagues over in English regularly have about canonicity and the ways in which the canon can center the voices of (predominantly) white men. Words that are important to include—identity words (“asexual” or “Afro-Latinx”), transferred words from other languages, and words that we’ve developed to cover new things in our experiences (“[Zoombombing](#)”) would feature as ‘false negatives’—and that would mean that their CorrectList isn’t a perfect measure of the words we use.

But how to start a conversation about ensuring that we are inclusive in our language for our CorrectList? My colleague decided to give students a ‘dummy’ version of a view that one could have about spellchecking, and have students engage in the practice of argument repair for that view.

My colleague writes of the exercise:

I started with

“A good spellchecker should return the correct spelling for any misspelled word.”

and we discussed the problematic nature around “correct”, both from a technical perspective (what should “thes” be corrected to?) and an ethical perspective: “who defines what is correct?”. This allowed us to change it to:

“A good spellchecker should return the word most likely intended by a given misspelled word.”

I then had students go to breakout rooms and continue this reshaping process, telling them that they would share their final argument with the whole group afterward. I bounced around to breakout rooms and students were largely having good conversations around these points, though I had to keep pushing them to bring it back to actually offering new versions of the argument. When we came back, the versions from the breakout rooms were:

“A good spellchecker should return the word most likely intended by a given misspelled word based on the context of the sentence; the grammatical structure of it; the language; and the person’s language does not align with that of the text file.”

“A good spellchecker should return the best word in the context of the sentence, recognize proper nouns, and be unbiased.”

In their conversations, students were thinking creatively about how a variety of different users might be served by the CorrectList used or the permutations checked by their spellchecker. Even that first move that students made—from focusing on “correctness” to user intention—was an important change in their ethical thinking, as well as their technical design of the spellchecker. The argument repair technique allowed students to recognize that uncaredful assumptions about what is ‘correct’—even for something as simple as a spellcheck—can do harm to those who don’t fit easily into dominant experiences.