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Promoting Cognitive Conflict In Health Care Ethics: Moral Reasoning With Boundary Cases

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Abstract: As many college students are at a time of tremendous personal and academic growth, introductory philosophy courses have the potential to equip students with practical critical reasoning skills. Despite this, many introductory courses in this domain emphasize students' learning about pre-existing dialectics in the abstract, rather than over self-reflection and development of personal philosophical perspectives. In doing so, we may be failing to support the needs of pre-professional students looking to prepare themselves for their careers ahead. In this practitioner paper, we report our efforts as a practicing philosophy instructor (Bursten) and a learning scientist (Finkelstein) to iterate on the design of a student-centered instrument for moral reasoning in medical contexts within an introductory Health Care Ethics course. We identified the positive role that providing *boundary cases* played in helping students' experience productive cognitive conflict, and, in turn, how these experiences improved critical self-reflection and moral reasoning.

Introduction

Humanists in higher education are frequently asked to justify the value of their disciplines, even as politicians, journalists, and teachers wring their hands about the need for an educational system that more effectively imparts marketable skills in critical reasoning. The irony in this juxtaposition is the subject of rueful water-cooler conversations in philosophy departments, where improved skill in critical thinking is presumed as a learning outcome in any introductory class. However, many philosophy classes teach that skill by rehearsing long-standing and insoluble debates among long-dead men, and students can—understandably—fail to export the lessons they learn in their later post-collegiate professional and personal lives. The dispassionate teaching of philosophy as a static dialectic, while useful for the evolution of academic debates in the field, fails to structure thinking practically or promote cognitive conflict effectively, and students are pedagogically underserved as a result.

This situation is troubling for the future of philosophy and for the future of education in critical reasoning. In applied ethics classes such as Health Care Ethics, failure to resolve the disconnect is even more perilous, as it could breed a generation of professionals unable to recognize or respond appropriately to instances of moral conflict. Here we examine an intervention in assignment design in a Health Care Ethics class at the University of Kentucky from 2016–2017. We designed an initial assignment aimed at helping students reflect on their own moral compass within medical contexts, and discovered that this initial instructional activity failed to meet our intended goals. We iterated on this assignment using principles from learning science such as information sequencing and boundary case examples the following semester, and identified salient differences in students' outcomes. We attribute the differences observed to the increased cognitive conflict and personal stakes students experienced with the addition of boundary case examples. In writing this paper, we demonstrate an effective assignment for promoting moral reasoning skills at a time when such skills are salient for being both important for students' development and difficult to teach. Further, we additionally aim for this paper to help contribute to addressing the long-recognized disconnect between learning science research and traditional classroom instructional design by modeling our process for iterating on the design of a learning activity based on pedagogical principles.

Motivation and methods

Health Care Ethics is the branch of philosophy concerned with making and justifying moral decisions in medicine. It includes debates about assisted suicide, abortion, the proper distribution of scarce and expensive treatments during an epidemic, and whether and when to start and stop extraordinary measures to save the life of a brain-damaged patient. The students who take this class are primarily interested in health care careers and share a deeply-felt anxiety about the prospect of making a life-or-death decision on behalf of their patients. What these students need out of this philosophy class is practice in conscious self-reflection, tailored to the domains of medicine and health care, in order to improve their capacity to make reflective, rational ethical decisions under professional pressure.

To meet the instructional needs of these students, we developed a series of instructional activities, the Moral Compass assignments, around a self-reflective personal essay, an uncommon practice in philosophical pedagogy. In the initial formulation of the essay, which drew on principles of structured learning, students succeeded in consciously identifying their personal values but largely failed to employ the identified values to explain how they would reason in instances of moral conflict in health care settings. By redesigning the assignment around boundary cases, we were able to promote cognitive dissonance and observe improved use of identified personal values as a source of reasoning in instances of moral conflict.

Additionally, we found in this assignment design an interesting overlap between contemporary learning science theory and historical philosophical analyses of education and rationality. In the 1870s, the American Pragmatist philosopher Charles Sanders Peirce wrote “The Fixation of Belief,” (1877) one of the great modern philosophical essays about how people come to question, form, and hold beliefs. In it, he defends an early formulation of the Pragmatist school’s definition of critical thinking, namely that rationality is a faculty, rather than an innate cognitive architecture or simply seeing the world in an objectively correct and dispassionate way. For the Pragmatists, rationality is a tool to be honed and developed with practice and through exposure to situations that challenge it with increasing difficulty. This analysis of rationality parallels and undergirds contemporary constructivist observations about the process of learning, which we observed in our collaboration during the assignment revision.

The Moral Compass essay: initial formulation

The Moral Compass assignment carries through the semester as a piece of critical-thinking infrastructure. In the initial essay and subsequent individual and paired reflection activities, students practice recognizing and articulating their personal bases for self-reflective moral reasoning in health care settings by answering a series of short-essay questions designed to identify (1) their centrally held moral values, (2) the sources of those values, and (3) the consequences of those values for their beliefs about the ethical course of action in various health-care situations. Students then employ and develop their personal Moral Compasses throughout the rest of the class as they work through increasingly difficult historical and contemporary case studies in ethical conflict in health-care settings.

In its initial formulation, the third section of the Moral Compass essay asked students for an *implication* of their moral compass, that is, a general consequence of their moral beliefs for a problem domain in health care. Students chose a domain area from among assisted suicide, physician assistance in prisoner executions, abortion, doctors going against patients’ wishes, or disclosure of medical errors, and they determined how their Moral Compass would constrain or guide their beliefs about the limits of ethical action in their chosen domain. The goal of this section of the essay was to foster students through the state of doubt Peirce identified as an internal struggle to reconcile a challenged belief to newly presented information. Students had previously encountered boundary cases in these domains in readings and class discussions, and the assignment intended them to engage in a Peircean struggle in order to come to a belief about the morally permissible response to the ethical conflict presented in each domain. In practice, however, most students chose a domain where they could easily identify the morally permissible response according to their Moral Compass without engaging in a Peircean struggle. If their Compass identified all human life is sacrosanct, they wrote about the impermissibility of abortion; if their Compass emphasized the importance of individual liberty, they advocated the permissibility of assisted suicide. They avoided stirring internal conflict wherever possible, which both inhibited the goal of the assignment section and depressed the level of sophistication in the ensuing paired and class discussions. The implication piece of the assignment demanded revision in order to channel students into the more difficult task of applying their Moral Compass to a domain without an obvious, conflict-minimizing response.

Intervention: cognitive conflict for moral reasoning

Practical, evidence-based theories of learning are not traditionally applied to instructional design in higher education (Ambrose et al., 2010), and yet it is in these practice-based environments (in other words, real classrooms) where these theories have the most potential for positively impacting student outcomes. In revising this assignment, we maintained three joint goals that we felt were central to the students’ growth: they should have the *knowledge* that alternative moral perspectives offer different interpretations of complex situations without sacrificing goodness, the *skills* to reason about complex problems from competing angles, and the *dispositions* to choose to wrangle with complex phenomena that feel initially uncomfortable. We aimed for this assignment to help students grapple with learning to confront, examine, and evaluate the methods and considerations that impact their everyday moral decision-making. We applied three principles of evidence-based theories of learning to our instructional design to meet these goals.

Increased relevance through tangible examples

While philosophy instruction typically calls upon thought experiments or abstract scenarios, there is evidence that students may benefit from the increased emotional reality of real, tangible scenarios. Particularly in an applied health care ethics course where many students are pre-medical, this was a key opportunity to replace theoretical, abstract scenarios with real cases that contemporary physicians themselves had to grapple with. In doing so, we aimed to make it clearer for students to see that these questions may become a reality of their own throughout their career. We believed that in doing so, we might be able to increase students' emotional engagement with the assignment.

Cognitive conflict through boundary cases

Theories of cognitive conflict argue that when an individual holds two or more elements of knowledge that are relevant to each other but inconsistent with one another, a state of discomfort, or dissonance, is created. Cognitive conflict is well-regarded as a proponent of self-reflection and cognitive change. Individuals in these states report increased negative affect, and this negative affect is reduced as cognitive discrepancy is reduced, such as through changing their mind (Elliot & Devine, 1994; Harmon-Jones, 2000). While traditionally applied to students' understanding of scientific phenomena in a Piagetian sense, notions of cognitive conflict may also be relevant when it comes to subjective and personal matters such as morality. For example, self-consistency theory argues that cognitive dissonance occurs when a person acts in a way that violates their self-concept (Aronson, 1999); for this reason, we believed that in choosing the tangible examples described above, we would be able to capture complex scenarios that would make it more difficult for students to apply the conflict-avoidant, categorical moral compasses they demonstrated in the earlier assignment (e.g., "physician-assisted suicide is always bad, because doctors should never be allowed to intentionally cause harm.")

Scaffolded reasoning through structure and sequencing

The structure in which information is presented to students has the ability to influence the knowledge architectures they build through the process of working through an assignment. Instructors may be able to better support students' development of complex reasoning by sequencing assignments intentionally and allowing more room for micro-reflection and peer or instructor feedback cycles. In the initial assignment, students had relatively few structured opportunities where they were required to explicitly grapple with uncomfortable perspectives; in the revised assignment, we aimed to build upon theories of information sequencing to build in such grappling into the instructional activities. For example, in contrast to the more independent nature of the first assignment, we built in an in-class activity that required students to identify the similarities and differences between their own interpretation to a boundary case with the interpretations provided by a partner.

Revised assignment

In the revised assignment, we developed the pair of boundary cases by adapting factual cases published in Steinbock et al. (2013). These cases occurred in recent medical history and were chosen in order to compel students to examine unexpected or unwelcome ethical ramifications of their newly-articulated moral compasses. In both cases, the students examine ethically complex patients from the perspective of the health care professionals treating the case.

The first case ("Mrs. Boomsma") presents a woman, whose primary social and emotional identity is as a mother, seeking assisted suicide after both her sons die tragically within a few years of one another. She has no family and no mental illness, aside from a grief-induced clinical depression. The case considers the perspective of her psychiatrist, who consults with a variety of colleagues before determining that the ethical course of action is to provide the woman with medication that allows her to take her own life.

The second case ("Melissa") presents a drug-addicted woman with a history of mental illness who is pregnant with twins. When she notices an unfamiliar sensation in her pregnancy, she visits an emergency room, where physicians diagnose her with low amniotic fluid and recommend that she undergo an immediate pre-term Caesarean section. She declines the recommendation and delivers later in the pregnancy, which results in one of her children being stillborn. She is later charged with child endangerment for this decision, and her doctors testify against her.

In each of these cases, students consider whether they would have acted similarly to the physicians or differently (Would they have given the lethal medication? Would they have let the woman disobey doctors' orders or physically forced her to remain in the hospital and deliver?), and to explicate their reasoning for their chosen course of action in by referencing their personal Moral Compass.

Observations and discussion

Using constructivist principles, we adapted the revised assignment from the initial assignment in three ways: by developing additional structure by asking students to respond to more detailed cases with stricter interpretive parameters, by improving partner reflection activities to allow students to focus on how their Moral Compasses differed from those of their peers, and, most importantly, by narrowing the domain in which students tested their Moral Compass from a general area of ethical concern into a targeted boundary case.

We have applied the revised assignment in two semesters at the time of this writing. In both courses, there seemed to be a marked difference in students' demonstrated productive reasoning behaviors compared to those demonstrated by students who completed the initial assignment in the years prior. Broadly, through the revised assignment, students broadly seemed to make more references to their own uncertainty, and demonstrated increased engagement with value-challenging scenarios. There also seemed to be a notable reduction in *catch-all*, categorical rules being applied to complex situations and dismissiveness towards their peers' competing frameworks.

In the initial assignments, students' responses were often categorical. One such representative response "*according to my moral compass, I do not think it is ever morally permissible for a woman to have an abortion.*" Conversely, in the revised assignment, students demonstrated several complex structures not widely seen in the initial assignment, including reasoning from others' perspectives ("Mrs. Boomsma's core values were to care for her children and she practiced those values for more than 20 years") and supporting their arguments with more specific examples ("When Doctor Chabot decided to use the lethal injection on his patient, he violated the religious, the life value and the optimism compasses. Mrs. Boomsma's reasons for suicide are questionable reasons and hence not justified.")

One particularly interesting feature of the revision, which may be an artifact of the regional environment in which the class takes place, is that students frequently appealed explicitly to their religious backgrounds in developing their Moral Compasses, and during these appeals confronted the fact that there are a variety of ethical frameworks available within a particular religious tradition. While the student population each semester included students of Jewish, Muslim, Hindu, or non-religious backgrounds, a majority of students each semester identified as Christian, and most of these students initially appealed to their Christianity as an unequivocal guide to action. With the development of their Moral Compasses, however, and especially in a paired reflection activity during the revised assignment, students confronted the notion that their peers could identify as Christian and yet arrive at ethical conclusions distinct from their own. For instance, some students in this population thought it was morally obligatory for the psychiatrist to help the woman in the first care take her life and some thought it was morally impermissible, and each side was surprised at each other's assessments. The realization among this student population of a shared religious background that nonetheless led to differing ethical recommendations was referenced in ensuing classroom and homework discussions, and it advanced and increased the sophistication of these discussions.

Additionally, we observed that in a paired reflection activity where students were asked to identify similarities and differences between the implication/application of their Moral Compass and that of their partner, the initial assignment never produced any observed changes or dissonances in the partner pairs. In the revised assignment, however, some students reported that their discussion with their partner changed their minds about the ethical course of action in the situation, either through a re-examination of their Moral Compass itself or through additional discussion of what actions are suggested or mandated by their Compass.

Conclusion and broader implications

Learning is a constructive and continuous process. Peirce and his contemporaries have argued, and modern-day learning science provides evidence that, this process occurs by the iterative testing of beliefs against causes for doubt, which he describes as "an uneasy and dissatisfied state from which we struggle to free ourselves and pass into the state of belief." (Peirce, 1877, p. 10) It is in this active struggle between belief and doubt that knowledge is reorganized, mindsets are updated, and learning occurs. This framework of doubting as an internal struggle that is resolved by forming a belief is a useful philosophical analysis of the learning processes observed in the promotion and resolution of cognitive conflict.

A continued practice of self-reflection is widely regarded as a central foundation of this process. Unfortunately, in many courses purporting to teach critical thinking, self-reflection rarely makes an appearance. Instead, students are assessed only by their abilities to apply someone else's theories to someone else's cases. The traditional philosophical dialectic encourages secondary and even tertiary commentary as the standard assignment output. While this sort of pedagogical approach advances academic philosophy, it does not leave room for the self-reflection that Peirce and the American Pragmatists identified as critical to belief formation, and which is presently recognized as the learning that occurs when cognitive conflict occurs.

At the same time, when self-reflection *does* make an appearance in higher education courses, it may rarely reach the productive level of *critical* self-reflection (Atkinson, 2005). While critical self-reflection is intended to help students grapple with the struggle described by Peirce above, too frequently self-reflection has become equated with *journaling*, where students outline their thoughts as they have them (Eyler, 2000).

The progression of the Moral Compass assignment documented here captures our efforts at meeting both of the above sets of practical, pedagogical needs. In the initial assignment, we aimed to introduce self-reflection in ways that would be productive for students' personal post-collegiate application; in the revised assignment, we iterated the learning activities to better support the development of *critical* self-reflection, wherein they were provided with a structured environment that pushed them to re-examine and better understand their own values, perspectives, and behaviors more deeply. Through documenting this iteration here, we aim to provide an argument for coursework that pushes students to engage critically with the domain, as well as a model of our own process that may serve to support future educators' efforts to do the same.

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