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Adding academic rigor to introductory ethics courses using Bloom's taxonomy

Casey Rentmeester[1]

Abstract Since philosophy is a notoriously difficult subject, one may think that the concept of adding rigor to a philosophy course is misguided. Isn't reading difficult texts by Immanuel Kant or Friedrich Nietzsche enough to categorize a class as academically rigorous? This question is based on the misguided assumption that academic rigor has only to do with course content. While course content is a component of academic rigor, other aspects such as higher-order thinking, as well as how an instructor designs and grades assignments, contribute to the level of academic rigor in a course. The author provides several ways to increase the level of academic rigor in a philosophy course based upon Bloom's Taxonomy using examples from an introductory ethics course and then provides recommendations as to how to grade to promote academic rigor.

Keywords Higher-order thinking · Academic scaffolding · Course design · Assignment examples

Since philosophy is a notoriously difficult subject, one may think that the concept of adding rigor to a philosophy course like ethics is misguided. Isn't reading difficult texts by Immanuel Kant or Friedrich Nietzsche enough to categorize a class as academically rigorous? This question is based on the misguided assumption that academic rigor has only to do with course content. While course content is a component of academic rigor, other aspects such as higher-order thinking, as well as how an instructor designs and grades assignments, contribute to the level of academic rigor in a course. I provide several ways to increase the level of academic rigor in an introductory medical ethics course based upon Bloom's Taxonomy and then provide recommendations as to how to grade to promote academic rigor.

✉ Casey Rentmeester
casey.rentmeester@bellincollege.edu

[1] Bellin College, 3201 Eaton Rd, Green Bay, WI 54311, USA

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At a foundational level, something is rigorous if it pushes someone beyond what is easy. William James (1907/1955) argues that any enhancement of one's understanding requires some sort of mental strain. To make progress in anything important, there must be an element of rigor; otherwise, one can simply coast along without exertion. Faculty and students have differing perceptions when it comes to academic rigor. While faculty consider academic rigor to be related to higher-order thinking, students tend to relate it to the level of difficulty of the material and the workload for the course (Draeger et al. 2014). While academic rigor is difficult to define, a working definition of rigorous learning is "when students are actively learning meaningful content with higher-order thinking at the appropriate level of expectation within a given context" (Draeger et al. 2013, p. 268). Bloom's Taxonomy provides a guide to navigate instruction and learning from non-rigorous to rigorous. The six major classes of the original version of Bloom's Taxonomy are: 1) Knowledge; 2) Comprehension; 3) Application; 4) Analysis; 5) Synthesis; 6) Evaluation (Bloom et al. 1956). The classes are hierarchically ordered from lowest order of thinking to highest order. At the base of the hierarchy is knowledge, wherein "the student can give evidence that he remembers, either by recalling or by recognizing, some idea or phenomenon with which he has had experience in the educational process" (Bloom et al. 1956, p. 28). Knowledge acquisition in Bloom's Taxonomy is a matter of recognition and recall. An example of evidence of baseline knowledge acquisition in an early quiz setting is found in the following question:

What is the name of the highest human good, according to Aristotle?

a) Pleasure
b) Good will
c) *Eudaimonia*
d) Heaven

The ability to recall that the name of Aristotle's highest good is *eudaimonia* is a low order of thinking since this knowledge can be acquired through passive learning, i.e., a transmission of knowledge from professor to student (Tiberius 1986). Evidence of knowledge acquisition should be expected in any course since content mastery is an essential element of learning in general. However, if baseline knowledge acquisition is the only educational objective in a course, the course lacks academic rigor.

The second order of Bloom's Taxonomy is comprehension, which differs from knowledge in that it requires the student to explain ideas or concepts, rather than simply recognize the right answer. An example of demonstrating evidence of comprehension is the following short answer question: "Define Kant's categorical imperative." While the ability to answer this question does require more work on the part of the student than simple recognition, it is still not a sign of higher-order thinking since it doesn't require any critical thinking and the knowledge of this question can be acquired through passive learning.

As one moves up the hierarchy in Bloom's Taxonomy, one finds higher-order thinking, which is signaled by key hallmarks of critical thinking such as application of theory to practical problems of issues, analysis of information and stances on issues, synthesis of information from multiple sources, and evaluation of information, both critical and laudatory. Once an instructor has reached the third order of Bloom's

Taxonomy, namely, application, he or she has introduced academic rigor to the course. Applying knowledge in novel and unfamiliar situations is a sign of critical thinking and active learning since the student must transfer his or her understanding of a concept to a new context. Since this requires exertion on the part of the student, a self-initiated transferal of understanding in a low-stakes assignment is ideal the first time instructors embark upon this new terrain of rigor. The instructor should provide the appropriate coaching necessary to prepare students for similar applications in high-stakes assignments. An example of an application activity in a low-stakes, in-class group activity on Mill's utilitarianism is as follows:

> Imagine that you are a doctor. You are administering a routine physical examination, and the patient is in excellent health. Your mind, however, is really on more troubling matters since there are five patients in the critical care wing who are desperately in need of organ transplants in order to survive. Acceptable donors have not been found, and these particular patients are now in critical condition. As you are completing the physical exam of the healthy patient, it occurs to you that you could administer a shot to this patient that would cause him to fall asleep and die painlessly and then take the various organs out of this healthy patient and redistribute them into the five critical patients, thereby saving their lives.

> Examine this situation from a utilitarian perspective. As a utilitarian, should you administer the shot and make the transplants? Explain your reasoning by applying the greatest happiness principle and the utilitarian standard.[1]

This hypothetical scenario works as test of the students' understanding of utilitarianism since it highlights that numbers matter when one is attempting to maximize the happiness of the greatest amount of people and that intentions are irrelevant in the utilitarian calculus, but also that one must focus on the long-term anticipated consequences of any action. Thus, in assigning no moral weight to intentions and playing a "number's game," it would seem like killing the healthy patient would be ethical (from an act-utilitarian perspective). However, a long-range perspective would show immediately that adopting such a rule would erode the confidence in the healthcare system, and ultimately decrease the health and happiness of the world (from a rule-utilitarian perspective).[2]

The next order of Bloom's Taxonomy is analysis. Bloom distinguishes application from analysis as follows:

> In application [the emphasis] is on remembering and bringing to bear upon given material the appropriate generalizations of principles. Analysis emphasizes the breakdown of the material into its constituent parts and detection of the relationships of the parts and of the way they are organized. (Bloom et al. 1956, p. 144)

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[1] Mill's greatest happiness principle holds that "actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness" (Mill 1863/2001, p. 10) and Mill's utilitarian standard is "not the agent's own greatest happiness, but the greatest amount of happiness altogether" (p. 14).
[2] Brandt (1959) provides an exposition on the difference between act- and rule-utilitarianism.

In a philosophical context, this would include the ability to recognize unstated assumptions in an argument, the ability to distinguish descriptive statements from normative statements, the ability to distinguish premises from a conclusion, the ability to recognize logical fallacies, and the ability to recognize bias, among others. An example of an analysis question in a final exam setting in which students have already learned and identified logical fallacies is as follows:

An argument for the prohibition of abortion is as follows:

1) The Bible clearly states that murder is wrong.
2) Abortion is murder.
3) Abortion is wrong.

Identify the logical fallacy that exists in this argument.

Notice that this question requires the student not only to know the fallacy and apply it to the context, but also to analyze the argument in order to correctly identify the fallacious reasoning as, in this case, an argument from authority. This analysis requires a breaking down of the various premises of the argument, an understanding of how the premises work together, and then an ability to recognize the fallacy, which goes beyond application.

The next order in Bloom's Taxonomy is synthesis, which requires comprehension of content from multiple sources. Synthesis is a complex order of learning since it implies an ability to differentiate sources, understand the content of multiple sources, and often entails an ability to apply one's learning as well as an ability to analyze a situation. Here is an example of a case study used near the end of a course that demonstrates synthesis:

Mary C. Northern is 72 years old, has gangrene of both feet, which both need to be removed to save her life. She refuses this treatment and the doctors decide that she does not have the capacity to appreciate the severity of her condition. Tennessee appoints a guardian ad litem, which is a state-appointed person, to investigate the best interest of Ms. Northern. Her probability of survival without amputation is 5-10%, while her probability of survival after amputation is about 50%.

Provide an argument for and against the position that the state should mandate the amputation of Ms. Northern's feet and make the proper recommendation based on the reasons provided.[3]

By this point in the course, students are expected to have knowledge of all the major ethical theories and be able not only to recall the main aspects of them but also understand the assets and limitations of each theory, how to apply them to a context, and how to choose amongst them in regard to their relevance in a context. The fact that students must give an argument for *and* against amputation forces students to utilize at least two ethical theories, and the requirement to make the proper recommendation ensures synthesis of the information.

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[3] See State of Tennessee, Department of Human Services, v. Mary C. Northern 563 S.W.2d 197 (1978).

The highest order of learning in Bloom's Taxonomy is evaluation, which is "a complex process [that] involves some combination of all other behaviors of Knowledge, Comprehension, Application, Analysis, and Synthesis" (Bloom et al. 1956, p. 185). An essential aspect of evaluation is the ability to assess and take a stand on a topic or issue. The best place to design evaluation into an introductory level course is at the end of the course after all other orders of learning have been covered. To incorporate evaluation into a course, an instructor may design a final paper assignment that integrates concepts from the class but covers new ground so that the student is not simply restating what he or she has already learned but truly evaluating an issue from an educated perspective. An example of a final paper topic that asks the students to engage in evaluation is as follows:

> Medical professionals typically distinguish treatment or therapy from research where treatment has to do with interventions designed solely to enhance the well-being of a patient and research has to do with an activity designed to test a scientific hypothesis. In the famous Tuskegee Study from 1932 to 1972, this line was blurred as more than 400 black men were told they were being treated for "bad blood" but were actually explicitly not treated for their true known condition of syphilis. Read through the details on this case that has elements of racism, social justice, a lack of informed consent, and deception on the part of medical professionals. In reading about the case, you will meet Nurse Eunice Rivers, who was hired to aid in the study and worked closely with the subjects to ensure that they did not receive treatment in order to maintain the integrity of the research. Respond to this case by answering the following questions in light of the ethical theories covered in this course: 1) What are some of the elements of ethics and social justice that come forth in this study? 2) What rights of the research subjects were not respected? 3) Did Nurse Rivers fail in her duty as a nurse, given the American Nurses Association's *Code of Ethics for Nurses*?[4]

Since students are explicitly asked about ethics, justice, and rights, they must demonstrate knowledge and comprehension of course content. They must also apply at least one ethical theory, as well as analyze the situational specifics of the Tuskegee Study. Finally, the students must synthesize the information and evaluate whether or not Nurse Rivers failed in her duty as a nurse.

Along with the design of course assignments, the way in which an instructor grades such assignments can increase or decrease the level of academic rigor. Instructors teaching rigorous courses should provide students with rubrics for assignments when possible to inform students as to the bar at which they need to reach to be successful. Rubrics allow for objective grading if they are used correctly. One way to promote objectivity in using a rubric is to avoid the use of partial points since it is much easier to distinguish, say, a 3 from a 4 than it is to distinguish a 1.3 from a 1.6. An example of a rubric used for a final paper is as follows:

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[4] See Jones (1993) and American Nurses Association (2015).

_/3 **Format and Citations: 3 points**

• The paper is in CMS format; there should be an introductory paragraph ending in your thesis statement, a body of the work, and a conclusion.

3: The paper is appropriately formatted, is the minimum length, and has proper citations.

2: The paper is the minimum length with citations.

1: The paper is not the minimum length or attains the minimum length through creative use of margins or fonts.

0: The paper has no semblance of order in format and lacks citations.

_/4 **Abstract: 4 points**

• Your abstract should be one paragraph that summarizes the paper.

4: The abstract summarizes key aspects of the issue and clearly states the position of the author.

3: The abstract explains the position but does not shed sufficient light on the issue.

2: The abstract is not a fitting summary as it doesn't cover the main points of the paper.

1: The abstract is irrelevant to the assignment and/or indiscernible.

0: There is no abstract.

_/3 **Thesis: 3 points**

• Your thesis should be one well-formulated, yet succinct sentence **in bold** that tells me what you will argue in the paper.

3: The thesis in bold is clear, complex, and challenging. It does not merely state the obvious or exactly repeat the viewpoints of others but rather provides a novel perspective.

2: The thesis in bold is clear, though unimaginative in that it is largely a recapitulation of readings and class discussions.

1: The thesis is irrelevant to the assignment and/or indiscernible.

0: There is no thesis statement.

_/5 **Comprehension of author(s): 5 points**

• You should spend about two pages explaining the argument(s) of the author(s).

5: The student has a clear and distinct understanding of the argument(s) and is able to capitulate the argument(s) in his or her own words.

4: The student understands the argument but basically recapitulates the argument using only language from the authors themselves.

3: The student shows a basic understanding of the argument but does not capture the entire force or is unable to portray its significance.

2: The student is confused about the argument or attributes the wrong argument to a thinker.

1: The student does not understand the argument.

0: There is no explanation of the arguments involved.

_/5 **Student's argument: 5 points**

• Your argument should be about two pages and should back up your thesis.

5: The student provides a logically sound, compelling argument backed by evidence using ethical theory and/or concepts from the semester.

4: The student provides a logically sound argument backed by evidence.

3: The student provides a solid argument but does not provide sufficient evidence to support it.

2: The student's argument contains logical fallacies and/or is based mainly on anecdotal evidence.

1: The argument is difficult to follow and/or logically inconsistent.

0: The student provides no coherent argument.

_/5 **Spelling and Grammar: 5 points**

5: Paper is free of any spelling or grammatical errors.

4: Paper has 1–2 spelling or grammatical errors.

3: Paper has 3–4 spelling or grammatical errors.

2: Paper has 5–6 spelling or grammatical errors.

1: Paper has 7–8 spelling or grammatical errors.

0: Paper consistently has spelling or grammatical errors.[5]

Since a final paper should be at the highest order of Bloom's Taxonomy, it is important for instructors to provide low-stakes assignments that prepare students to complete the high-stakes final paper.

I have provided ways to increase the level of academic rigor of a philosophy course using Bloom's Taxonomy. Since Bloom's Taxonomy is hierarchical in nature, instructors who utilize this approach should provide the appropriate scaffolding into their courses to ensure that students are capable of meeting the course outcomes. Alternative models to academic rigor, such as those found in critical thinking models, will not be as hierarchical in nature, but will still likely have to move from knowledge acquisition to critical thinking.[6] In either case, I hope I have shown that there is more to academic rigor than course content and that course design and grading techniques can increase the level of academic rigor in a philosophy course.

Compliance with ethical standards

Conflict of interest statement   The author states that there is no conflict of interest.

References

American Nurses Association. 2015. *Code of ethics for nurses with interpretive statements*. Silver Spring: American Nurses Association.

Bloom, B.S., M.D. Engelhart, E.J. Furst, W.H. Hill, and D.R. Krathwohl. 1956. *Taxonomy of education objectives: The classification of educational goals*. London, Ann Arbor: Longmans, Green and Company.

Brandt, R. 1959. *Ethical theory*. Englewood Cliffs: Prentice-Hall.

Draeger, J., P. Prado Hill, L.R. Hunter, and R. Mahler. 2013. The anatomy of academic rigor: The story of one institutional journey. *Innov High Educ* 38 (1): 267–279.

Draeger, J., P. Prado Hill, and R. Mahler. 2014. Developing a student conception of academic rigor. *Innov High Educ* 40 (3): 215–228.

James, W. 1955. *Pragmatism*. New York: Meridian Books. (Original work published in 1907).

Jones, J.H. 1993. *Bad blood: The Tuskegee syphilis experiment*. New York: The Free Press.

Mill, J.S. 2001. *Utilitarianism*. Kitchener: Batoche Books. (Original work published in 1863).

Nosich, G.M. 2009. *Learning to think things through: A guide to critical thinking across the curriculum*. Upper Saddle River: Pearson Prentice Hall.

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[5] See Walvoord (2010).

[6] For a model of critical thinking, see Nosich (2009).

State of Tennessee. 1978. Department of Human Services, v. Mary C. Northern 563 SW2d 197.

Tiberius, R.G. 1986. Metaphors underlying the improvement of teaching and learning. *Br J Educ Technol* 17 (2): 144–156.

Walvoord, B.E. 2010. *Assessment clear and simple: A practical guide for institutions, departments, and general education*. San Francisco: Jossey-Bass.