

CC Student Views on the Nature of Disciplines

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Below are preliminary findings from our pilot study on CC student views on the nature of disciplines.

Overview

In Fall 2019, all incoming CC students were invited to complete one of three qualitative surveys regarding their views on the nature of academic disciplines. The surveys were built on the VNOS-C (Views on the Nature of Science, version C), which is a longstanding tool in science education research, but which was adapted to include the social sciences and humanities. In total, 26 students completed the Natural Sciences survey; 30 students completed the Social Sciences survey; 84 students completed the Humanities survey. 140 completed surveys were completed in total.

Natural Sciences

Students view natural science as empirical, specifically they view the natural sciences as:

- *Concrete rather than theoretical. Scientific ideas are a reflection of, or correspond to, reality.*
- *Science is “evidence based.” Science requires measurable data.*
- *Science is factual. It deals in the realm of “fact” and “truth.”*

“It is different from other disciplines of inquiry because unlike say, philosophy, Science is purely fact and evidence based, rather than being more opinionated.”

“Science is factually based and requires concrete thinking, rather than open-ended theories and unanswered questions”

Students believe that natural scientific research requires experimentation and replicability.

“... experiments create data from which scientific knowledge can be based upon and is meaningless without. If you can’t replicate an experiment and get the same results then you can not [sic] gain scientific knowledge that can be used.”

Students believe that science includes social and cultural values, but that it also makes universal claims.

“I think that science is universal, but a scientist can be influenced by social and cultural values in terms of what is examined individually....Scientists individually don’t impact the validity of scientific knowledge on the whole, just the surfacing of it due to individual interest.”

Social sciences

Students believe that the social sciences require some form of observation to generate knowledge.

“...you can’t understand people without observing them. Observations in this field may be more limited, as it's impossible to remove all the variables to see non-biased results, but it can serve to prove theories wrong or at least add more credibility to some theory”

Students believe that the social sciences are situated “in between” the natural sciences and humanities in terms of the reliability of the knowledge they produce. Specifically, they believe that the unreliability of social scientific knowledge is a result of the unpredictability of humans and societies, but that it should strive for reliability to be valid.

“Social science is different from other disciplines of inquiry because it is a lot more open-ended. There isn’t always an exact, precise answer. There isn’t always an answer at all. It’s always changing, and it’s relatively unpredictable.”

Students believe that, functionally, social science is “science” done on people or societies. In other words, it appears they are importing a mental model of natural scientific practices into the social realm. Social science is a derivation of natural science, but is less accurate in its findings.

“A social science, in my view, is a science based on people. All other sciences are about living beings or the environment, but social science is specifically on humans and human-made concepts like politics and economics”

“In my view, social science is a field which studies people and societies through a lens of mathematics and science.”

Humanities

Students believe that the humanities are based on opinions or “subjective” interpretations. In other words, that there are no “firm” claims that can be made in the humanities.

“In my view, the humanities are essentially whatever one makes them out to be. For example, they hold little right or wrong answers, and contain no black and white thinking, but instead rely on one’s own interpretations of texts.”

“The humanities, as I view them, are for more subjective and personal than other subjects. They relate to opinions and biases that are not as concrete as other things and may be learned and experienced differently depending on the individual because they all have foundations in human principles and interaction.”

The humanities are equivalent to the process of dialogue, reflection, and writing, often in a classroom setting.

“The humanities to me are classes that are more based on subjective than objective answers (i.e. writing an essay versus solving a math problem). They focus more on ideas and theories than concrete answers.”

Functionally, incoming students hold no understanding of humanities as meaning-making or knowledge producing enterprises because the humanities do not fit within the context of what “counts” as knowledge or academic research.

“Humanistic knowledge is formed from creating your own ideas after receiving information and sharing it with peers and professors. English classes usually consist of open ended [sic] conversation about literature where students and teachers share individual interpretations and constructing hypotheses by combining thoughts.”