

## Generalization, Justification, and the Waywardness of Teaching

Trent Davis

*St. Mary's University College*

It is frequently pointed out today that we live in a time of hyper-accelerated change. Perhaps nowhere is this more evident than in the pace of knowledge production. Over the last few decades of explosive technological growth during what has been aptly called the Information Age, the sheer amount of knowledge that has been produced is simply staggering. In the popular text, *The Craft of Research*, the authors confirm that “Research is in fact the world’s biggest industry.”<sup>1</sup> To help put this point into perspective, Robert Frodeman reminds us in the introduction to *The Oxford Handbook of Interdisciplinarity* that “a recent IBM commercial announced that each day we generate eight times the knowledge contained in all the world’s libraries.”<sup>2</sup>

Of course this statistic is more dramatic than helpful since it is impossible to imagine even just once all the knowledge contained in all the world’s libraries. But with so much knowledge available to those who have a computer and internet access, surely it is more vital than ever to have some sort of epistemological approach to evaluate conflicting knowledge claims and arguments. This is why I support Jeffrey Pocock’s effort in this interesting and provocative essay to discuss epistemological issues in the form of a sustained reflection on the role of generalization in educational research.

As I understand him, Pocock opens his essay by claiming that generalization, which he defines as “extending research findings to another context or person,” is “fundamental” to education research. He then proceeds to offer a summary of what he sees as the five key types of generalization and the three theoretical criticisms against them. He concludes by claiming that since philosophically speaking no form of generalization is epistemologically pure it must be “interest and need” that account for the persistence of research, and the “least expensive” option of having teachers do more of it is recommended.

I admire the directness of Pocock’s argument here, starting with his key assertion that epistemological concerns with generalization remain stubbornly persistent. And while I even agree with him when he writes that “*no-one* is able to overcome such problems,” I do want to clarify that what Pocock is referring to here is what he calls “flawless generalization” in a strict philosophical sense. When he asks, for example, “If we are equal in our generalizing abilities how then can we effectively distinguish between expert and non-expert, scientist and quack?,” it is the claim that “we are equal in our generalizing abilities” that gives me pause. While Pocock is right that “No generalization is flawless,” I want to follow this up by saying that the next step is to recognize that “some generalizations are still more warranted than others.” In other words once we accept that no generalization is perfect there is still epistemological work to do in terms of evaluating the imperfect generalizable

claims that remain, some of which will obviously be taken more seriously than others.

To be fair, Pocock does address this approach to the problem of generalization when he discusses “validity and reliability” and what he describes as “logical, methodological fixes” and “alternative strategies” to keep research moving along. Nonetheless, I want to emphasize that since the pure generalization problem has not been adequately solved, I believe that the philosophical emphasis ought to be on exactly the ways that interested observers can distinguish between the “scientist and the quack” when they hear generalizable claims.

I have nothing new to offer in this connection, but I would like to revisit the idea of *justification* here. As is widely recognized, epistemological problems have been frequently tackled as problems of justification. In his popular text *Epistemology*, for example, Robert Audi describes his approach to the entire text when he writes, “The main focus is the body of concepts, theories, and problems central in understanding knowledge and justification. Historically, justification — sometimes under such names as ‘reason to believe,’ ‘evidence,’ and ‘warrant’ — has been as important in epistemology as knowledge itself. This is surely so at present.”<sup>3</sup> In the introduction to *The Continuum Companion to Epistemology*, Andrew Cullison agrees with Audi here when he describes a version of justification as “the *Standard Method*”<sup>4</sup> when it comes to epistemology. Of course this is not to deny that there is an ongoing discussion of the problems of justification, and “the *Standard Method*” is not immune to criticism and amendment.

Along with encouraging a focus on the justification of imperfect generalization claims, I also want to make another, perhaps more startling point about the relationship between educational research and practice that is implied in Pocock’s essay. This is the reasonable assumption that there is necessarily a positive relationship between educational research and classroom life in that teaching practices should be informed by sound research. Since in my work with teacher candidates I have not always found this to be the case, I want to say a few final words about what I shall call the *waywardness* of educational practice.

Allow me to provide a concrete example to help flesh out what I am driving at here. Recently *New York Times* best-selling author Michael Gurian visited my university and spoke to a packed audience of teachers and teacher-candidates on the importance of recognizing the brain-based differences between boys and girls. As the title of his most recent book, *Boys and Girls Learn Differently: A Guide for Teachers and Parents*,<sup>5</sup> makes clear, Gurian believes that these physiological differences are so profound as to warrant the generalization that boys and girls learn differently *as boys and girls* largely irrespective of other variables.

The following week in class I asked my students what they thought of Gurian’s talk, and they admitted that they were left with some nagging questions. First, they were not really sure if the physiological differences between the brains of boys and girls were as significant as Gurian insisted, and they were unanimous in being very doubtful that they could account for the learning differences as strongly as Gurian

claimed. They even wondered if boys and girls really learned all that differently after all.

It was the next move in our class discussion, however, that surprised me. When I asked my students what they thought of the classroom practices that Gurian recommended, such as having more movement in the room and spending more time outside, the teacher-candidates were suddenly very enthusiastic to give them a try with their own students. Not only did the research Gurian provided in his talk suddenly seem irrelevant, but my students could see connections to other research and theory from other perspectives that seemed to support Gurian's prescribed practices. The teacher-candidates quickly came to the conclusion that in the face of the pressures and anxieties of teaching, their bottom line was whether any generalizable research could suggest a practice that might work "*in my classroom with this particular group of students.*"

Pocock is surely right to highlight epistemology as a subject that all educators should know more about, especially since all imperfect generalizable claims depend on further justification. However, we must always keep in mind that the line from research to practice is often an indirect one, since educators make decisions from a range of options that they believe will help the particular children in their care learn and grow together. This relationship between epistemology and the realistic problems of classroom life is surely a topic worthy of further study, and I am grateful Pocock's essay has helped bring it forward.

---

1. Wayne C. Booth, Gregory G. Colomb, and Joseph M. Williams, *The Craft of Research* (Chicago: The University of Chicago Press, 2008), 9.

2. Robert Frodeman, "Introduction," in *The Oxford Handbook of Interdisciplinarity*, ed. Robert Frodeman (Oxford: Oxford University Press, 2010), xxx.

3. Robert Audi, *Epistemology: A Contemporary Introduction to the Theory of Knowledge* (New York: Routledge, 2003), x.

4. Andrew Cullison, "Introduction," in *The Continuum Companion to Epistemology*, ed. Andrew Cullison (London: Continuum International, 2012), 10.

5. Michael Gurian with Kathy Stevens, *Boys and Girls Learn Differently: A Guide for Teachers and Parents* (San Francisco: Jossey-Bass, 2010).