Minds and more: Extending the scholarship of Graham Nuthall

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Abstract

Graham Nuthall described research findings from his recent classroom studies as educationally transformative, analogous to the shift to a Copernican universe. In honouring this assertion, we focus on two aspects of Graham's work: the role of theory in his scholarship, and the relationship between his scholarship and the pursuit of educational equity. In each case, we speak to why these aspects of his work are important and how each facet of his work is poised to advance the enterprise of education. Finally, we address some of the transformative implications of these two aspects of Graham's work for educational research and teacher education.
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We begin by expressing our appreciation to Dr. Baljit Kaur and to the editorial board of Teaching and Teacher Education for extending this opportunity to recognize the contributions of a scholar, who clearly brought enormous energy to his inquiry; an energy that will continue to reverberate in the educational community. Given the ambitious nature of Graham Nuthall's research agenda; given the voluminous data that he collected with his colleagues documenting teaching/learning episodes in classrooms; and given the legacy represented in the numerous manuscripts he prepared before his illness and death, there are many tacks that one could take in this activity. We have chosen to focus on two aspects of Graham's work drawn from his writings during the last 4 years (2000–04) of his life: the role of theory in his scholarship, and the relationship between his scholarship and the pursuit of educational equity. In each case, we will speak to why these aspects of his work are important and how each facet of his work is poised to advance the enterprise of education. Finally, we will address some of the implications of these two aspects of Graham's work for educational research and teacher education. As we wrote this piece, we imagined an audience of young scholars in education and teacher educators as the primary readers; this seemed fitting, since Graham's work was rife with possibilities that others will need to advance.

Before addressing these aspects of his scholarship, we must ensure that the reader understands the problem space within which Graham was working. This problem space, while represented in difference guises, was, in fact, quite consistent. Concerned that teachers had only their own practical theories derived from experience upon which they could draw to guide their decision making, Graham wrote: "The central problem of research on teaching

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is still the problem of creating an evidence-based model of the learning process that can be used by teachers to decide how classroom activities are affecting the learning process of individual students" (Nuthall, 2000, p. 4). This single—very rich—problem propelled Graham's program of research.

1. The role of theory in Graham's scholarship

In addressing this aspect of Graham's scholarship, we turn our attention to clarifying the importance of theory in educational pursuits, as well as identifying the numerous challenges that engagement with multiple theoretical frames can pose for educational researchers like Graham.

Theory building is integral to the work of advancing knowledge building within a domain. As diSessa and Cobb (2004) argue:

> "Theories … embody generalization, bringing order to a vast array of seemingly disparate phenomena that come to be seen as special cases of some theory. They encapsulate the most secure of our knowledge claims at any stage of scientific advancement. They enable us to discriminate between relations that are necessary and those that are contingent. They delineate classes of phenomena that are worthy of inquiry, and specify how to look and what to see in order to understand [phenomena]" (p. 79).

Graham, like a number of his contemporaries, was in the process of bridging among theories. He argued, in fact, for research that would lead to "a pragmatic theory of classroom learning". We will suggest that, in his search for a pragmatic theory of classroom learning, Graham assumed a situative perspective, drawing opportunistically upon some of the theories encompassed by this perspective.

As Greeno (in press) explains, the situative perspective builds upon and synthesizes two large programs of research dedicated to the study of human behavior, both of which emerged as alternatives to behaviorism in the 1960s and 1970s. The first research tradition is cognitive science with its attention to the patterns of information hypothesized to be recognized or constructed in activity. Graham was obviously comfortable with cognitive theory and frequently explicated learning by making reference to the cognitive reorganization that goes on in the mind of an individual. For example, Graham wrote: "A representation of each learning experience is stored in long-term working memory for a period of about two days" (Nuthall, 2000, p. 7).

However, Graham was also mindful of the limitations of cognitive theory in addressing the issue about which he cared most and, therefore, turned to interactional studies, the second major research program that shapes a situative perspective. (Greeno, in press). These studies focus on patterns of coordination among groups of individuals engaged in joint action. The defining characteristic of a situative approach is its focus on complex social organizations such as those composed of teachers, learners, texts and curricula, technological tools, and physical contexts; all of which constitute *activity systems* (see Brown, Collins, & Duguid, 1989; Cobb, 1994; Greeno, in press). Graham acknowledged the roles of these activity systems, noting for example, "the structures and procedures of the classroom become the structures and procedures of cognitive processes" (Nuthall, 2000, p. 55).

There were three domains, in particular, to which he attended: (1) the *curriculum content* (the critical learning components within a discipline), (2) the *classroom behavior*; for example, the various ways in which students provided evidence of their learning (e.g., notebook entries, short-answer responses), and (3) the *participation structures* (small-group activity, whole-class discussion) in which students routinely engaged. Graham maintained that these structures shaped cognition and learning.

The focus on classroom behavior and participant structures is consistent with a situative perspective, which maintains that all socially organized activities provide opportunities for learning to occur, including learning that is different from what a teacher or curriculum designer might have intended. This finding was quite prominent in Graham's painstaking efforts to document the proportion of targeted concepts that were attained, by whom, and over what period of time. To this extent, Graham's research is extremely valuable for advancing a situative approach. For those who would continue his work, there is an additional tenet of the situative approach that might serve as a useful guide; i.e., situative analyses include hypotheses about *principles of coordination* that support communication and reasoning among these activity systems. While acknowledging the roles of these activity systems, Graham did not choose to focus his lens on their interactivity. For example, the vast majority of the