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PRESIDENTIAL ADDRESS

# Staking a Claim on Learning: What We Should Know about Learning in Higher Education and Why

*Anna Neumann*

The U.S. Constitution makes no mention at all of the freedom to learn. It’s a curious omission since our other essential freedoms—to worship, print and read, assemble, and vote—depend on people’s learning to argue and write,

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to inquire and imagine, and to act ethically and humanely. As a scholarly community, we study higher education because we believe that it is a site for learning how to live a full and democratic life (Gamson, 1984; Shor, 1992), and we fight for access to higher education so that all can exercise the freedom to learn.

I view freedom to learn as a largely unspoken assumption of American civic life and society. Our educational system, including higher education, instantiates this freedom which, as indicated, underlies many others. I wish to note, however, that any person's activation of his or her freedom to learn—substantively, deeply, conceptually—demands a form of access that exceeds formal admission to an institution or degree program. Once “in,” a student must be positioned, by way of teaching, to access the skills, knowledge, and ways of knowing likely to lead to deep substantive understanding and insight. Such access is a prerequisite to learning and to full engagement of one's freedom to learn. The research I discuss here is dedicated to understanding and improving teaching that strives for such learning, a historic ideal in education broadly and higher education specifically (see Dewey, 1916/1944, 1929/1964, 1938; Freire, 1973/1982; Moses & Cobb, 2001; for discussion of related higher education research, see Anderson, 2002; Bensimon, 2007; Gamson, 1984; and Hurtado, 2006).

Like many of you, I have a personal stake in the freedom to learn. In 1958, my parents chose to immigrate to the United States. More than a decade after their liberation from Auschwitz and from the Ukrainian labor camp of Shargarod, they still bore the wounds and inhabited the nightmares of being denied the freedoms that our Constitution provides—and even, as in the case of their family members, the right to life itself.

With my sister, Lily, and me, they settled in a series of small Texas border towns searching to be free from death, loss, and fear. They sought the freedom to attend a synagogue and to read the prayerbooks they had smuggled through Europe in piles of old clothes. They treasured their many new freedoms—to read the *Brownsville Herald*, to complain about unjust taxes, to gather with those few others in town whose memories, recounted in Yiddish, echoed their own. My parents worked very long hours to provide for my sister and me. There was no time in my father's American life, and very little in my mother's, to pursue the freedom to learn. They left that for me.

It's been an incredible gift, one that I came to cherish still more as I watched both my parents age and as I myself moved further from them—geographically, linguistically, academically. Even as in memory, they felt, and forever will feel, as close to me as I am to my self. It's in this spirit of remembrance, of struggles for life and learning, of hope—that I offered “Freedom to Learn” as a starting point for our work at this conference.

This evening, I will talk about learning in higher education and what I think that we as scholars of higher education need to know about it. I will

present some claims about learning in higher education which are grounded in literatures that have grown alongside our own field. To illustrate these claims I will take you inside an undergraduate philosophy class as the instructor and students puzzle over some of the early ideas in Rene Descartes's *Meditations on First Philosophy*. Classes in philosophy, and in the humanities broadly, are staples of general education which itself comprises about a third of the study requirement for a bachelor's degree in the United States (Lattuca & Stark, 2009). While the content and structure of general education, and of courses included therein, have changed over time (Stark & Lattuca, 1997), writings by Descartes have persisted as central to this curriculum (Hacking, 2004; Mayer, 1993). I will contrast the images of learning that the case represents with images of learning that animate contemporary higher education policy and practice. You will see a gap between how cognition researchers and higher education policymakers think about college students' learning. I'll conclude by discussing the implications of this gap for our work as researchers committed to improving teaching, professional development, policy, and leadership for supporting and advancing college students' learning today.

But what *is* learning in higher education? To learn is to encounter an idea that resonates with or contravenes something we know already, consciously or not. Thus, to learn is to acknowledge, bring to the surface, and examine the overlaps and tensions, or the points of friction, between an idea we hold already—in whatever nebulous form—and the new or different idea appearing before us (Bransford, Brown, & Cocking, 2000; Shulman 2004a, 2004b). This definition serves as a foundation for the following three claims:

*Claim 1:* Learning in higher education requires that a learner encounter and interact with a subject-matter idea culled from a discipline or an interdisciplinary field. In other words, subject matter matters (Bransford, Brown, & Cocking, 2000; Dewey, 1902, 1916; Schwab, 1978; Shulman 2004a, 2004b). If it did not matter, we would not have college majors and courses.

*Claim 2:* Encountering a new idea can bring to the surface a college student's prior knowledge of a subject of study (Bransford, Brown, & Cocking, 2000; Dewey, 1902; Shulman, 2004a, 2004b). Culture shapes this prior knowledge. The ideas, assumptions, and beliefs that students bring into class as starting points for their learning of academic ideas are rooted in students' family and community lives, past schooling, and other personal experiences, all culturally shaped (Gonzalez, Moll, & Amanti, 2005; Gutierrez & Rogoff, 2003; Ladson-Billings, 1995, 2006; Lee, 2007). This prior knowledge can feel personal or even sacred to students (Neumann & Peterson, 1997; Sarroub, 2005).

*Claim 3:* Learning in higher education emerges when a student acknowledges and works through differences between her or his prior views and beliefs and new ideas that instructors or texts represent (Bransford, Brown, & Cocking, 2000; Shulman, 2004a, 2004b).

This learning may involve a cultural encounter between one's own, one's family's, and one's communities' deeply held views *and* the views that scholarly communities profess (Neumann, Pallas, & Peterson, 1999). Such encounters have both cognitive and emotional features (Hofer, 2001; hooks, 1994). A focus on cognition alone yields a partial account of learning in higher education, much as it does, broadly, in life (Neumann, 2009).

These claims about students' substantive learning, and related claims about teachers' teaching, are not my own. They are rooted in John Dewey's (1902, 1916) conceptions of learners as developing beings and of learning as rooted in persons' encounters with ideas unfamiliar to them. They also draw on contemporary analyses of how people, as knowledgeable beings, connect with, or remain disconnected from, subject-matter ideas that differ from what they know already. Major contributors to my work in this vein include Lee Shulman, Penelope Peterson, Magdalene Lampert, Deborah Ball, Gloria Ladson-Billings, Carol Lee, Kris Gutierrez, Luis Moll, and John Bransford. These scholars' disciplinary orientations include psychology, the learning sciences, anthropology, sociology, and philosophy. Virtually all have situated their studies in K-12 classrooms or have positioned K-12 education at the center of their concerns. I particularly recommend and call specific attention to K-12 research and framing theories that have influenced my thinking in this line of work by Ball (1993), Bransford, Brown, and Cocking (2000), Dewey (1902, 1916), Gonzales, Moll, and Amanti (2005), Greeno (1998), Greeno, Collins, and Resnick (1996), Gutierrez and Rogoff (2003), Heaton and Lampert (1993), Ladson-Billings (1995, 2006), Lampert (2003), Lee (2007), Prawat and Peterson (1999), Schwab (1978), Shulman (1987, 2004a, 2004b), Vygotsky (1978), and Wortham (2006).

Now let me be clear: The differences between K-12 and postsecondary education *do* matter (Menges & Austin, 2001). Each sector offers distinctive resources and poses equally distinctive constraints on the learning of students who, by virtue of their life-course positioning, are differently poised to respond to them (Pallas, 2007; Rose, 2012). Yet as a teacher and researcher who has studied the learning of college presidents, administrators, teachers, scholars, and students, I argue that K-12 research does offer many helpful concepts for advancing what we, as a field, already know about students' learning in college—and also what college teachers can do to support that learning. Those concepts include pedagogical content knowledge (Shulman, 1987; see also Ball, 1993; Grossman, 1990; Wineburg & Wilson, 1988), culturally relevant pedagogy (Ladson-Billings, 1995, 2006), cultural modeling (Lee, 2007), and students' prior knowledge as socioculturally and sociohistorically framed (Gonzalez, Moll, & Amanti, 2005; Gutierrez & Rogoff, 2003).

Yet I do not, for a minute, believe that these concepts can be picked up and dropped wholesale into higher education. What I *do* firmly believe is

that these concepts can serve as points of departure for our own work—for example, as we rebuild them to fit the conditions of college students’ learning and college teachers’ professional development. (For examples of such work in our own field, see Bensimon, 2007; Castillo-Montoya, 2013; Neumann, Castillo, & Bolitzer, 2010, 2012.) In doing so, we also may uncover concepts that are unique to postsecondary learning and teaching or that K-12 researchers may wish to consider for their own work. I turn now to a case of college learning and teaching that reflects this approach.

### ENCOUNTERING DESCARTES

Sofia is an Associate Professor of Philosophy at Meritage University. I describe her honors-level introductory philosophy course, in which she interacts with Adina, Gilbert, Marcos, and about a dozen other beginning undergraduate students. (To assure confidentiality, I use pseudonyms to designate the university, students, and instructor; I also mask other background features that may reveal identity.) As part of a study of classroom teaching and learning of liberal education in high-diversity urban college classrooms, I observed and audiotaped Sofia’s class once a week during the spring 2011 semester (15 weeks). Through the semester I read as many of the assigned philosophy texts as I could. I interviewed Sofia regularly about those texts, how she taught them, and how, in her view, students made sense of them. I also attended a second section of Sofia’s course for the purpose of cross-validation. Tonight, I am taking the liberty of homing in on a single class session to illustrate the claims I’ve just laid out and also to share with you my evolving approach to studying learning in higher education.

Some background information will help contextualize this class session. I recently initiated several classroom-based studies of the pedagogies of liberal education in urban colleges enrolling predominantly first-generation students of color. My study of Sofia’s class, the first of these cases, grew out of the Metropolitan Colleges Institute for Teaching Improvement (MetroCiti), a research-based community outreach project through which I convened eight to 10 experienced and accomplished college instructors and four graduate students committed to strengthening teaching and learning in the liberal education curriculum. Participating instructors were fulltime faculty teaching liberal/general education (humanities, arts, social sciences) at two- or four-year colleges in the New York metropolitan area. The graduate students had taught or worked with undergraduates in high-access urban colleges. We met as a professional development seminar for approximately 36 hours throughout 2008-2009 (12 sessions), reconvening on a smaller scale in spring 2010. In the seminar, we read and discussed selected philosophies of teaching and learning, culturally relevant pedagogies, learning theories, research on

human cognition, and teacher autobiographies. In each session we closely examined and tested central concepts, from readings, against the MetroCiti instructors' own classroom teaching experiences. My MetroCiti colleagues and I concluded that to improve liberal education teaching and learning, we must first document what it looks and sounds like in "real life" today, what it achieves in real classrooms, and where and when it falls short. (Studies emerging from MetroCiti include Castillo-Montoya, 2013; Neumann, Castillo, & Bolitzer, 2010, 2012.)

I (or for two sessions, research assistant Liza Bolitzer) visited the class once weekly. We prepared for class by reading assigned texts to the extent possible. (I was teaching and engaged in administration fulltime through the semester of the study.) For example, to prepare for the class presented here, I read, alongside students, *Meditation One* and *Meditation Two* of Donald A. Cress's translation of Rene Descartes's *Meditations on First Philosophy* (3rd ed., 1993). We audiorecorded all observed class sessions (10 out of 37 one-hour regular class sessions for the semester); audiorecordings were fully transcribed. I myself transcribed three class sessions, including the class session partially featured here, and two professor interviews to establish a documentation protocol. We also took observational notes and, in addition to books and readings, collected all pedagogical documents distributed to students. I interviewed the instructor after virtually every class session and through two two-hour semi-structured interviews—one shortly after the semester started, and another at the semester's end. These interviews were audiorecorded and transcribed.

The discussion represented here occurred over 30 minutes of class time. Analysis involved teasing apart multiple conversational threads to illuminate and highlight a single thread of students' substantive learning and the teacher's attentiveness and responses to their prior knowledge, ideas I discuss here. To accomplish this and to facilitate presentation of evidence for my claims, I carefully "edited out" a number of extraneous comments, always tacking back to the "thread" of talk and thought I sought to follow. Such "researcher moves" do often reduce conversational complexity. Thus, what I present here is but one strand, albeit central to my analysis, of what went on in class during the featured half-hour.

Let me begin with a few words about Meritage University. Meritage is a diverse, private urban university serving about 8,500 students, 60% of them undergraduates. Virtually all are commuters. Undergraduate programs span liberal arts and preprofessional areas. A majority of students aspire to careers in the health professions. About two-thirds of undergraduates are students of color. Most students rely on financial aid. Most of the undergraduates I met at Meritage in Sofia's classes were first-generation college students; many were immigrants or children of immigrants.

The story takes place as Sofia leads her class at Meritage through the early portion of Rene Descartes's *Meditations on First Philosophy*. It is the second week of the spring semester. I will relate the story of what happened in class in three parts.

### **Part 1, The Matrix**

Early in *Meditations*, Descartes subjects his most basic beliefs to doubt. "Do I exist?" he queries. "Might I be asleep—dreaming? Could I be part of another being's dream? Does the world I see, hear, smell, and touch truly exist?—or am I deceived? Could this world be an illusion—the handiwork of an 'evil genius' who uses us for his ends?"<sup>1</sup> Doubting of this sort is central to understanding Descartes' *Meditations*. Sofia has told me what she thinks could happen in class as she introduces Descartes's doubt: Some students will relish it. Others will question Descartes's common sense—possibly, his sanity. Some will debate him. Others will struggle. Some may shut down.

So just how will Sofia teach Descartes's doubt—and the very act of doubting—to her students?

When Sofia first introduced Descartes and his question—"Am I asleep? Is this all a dream?"—students volunteered a surprising thought: "This sounds a lot like the movie *The Matrix*." The class erupted into talk, with students well-versed in the movie filling in those less familiar with it. Sofia let that conversation play out a bit.

In *The Matrix*, a computer hacker named Neo learns that what he thinks is the "real world" is actually an illusion created by a complex computer program. That vast computer system feeds off the energy produced by human beings who are kept immobile in a dream state in pods. Much like Descartes's *Meditations*, *The Matrix* raises the question: Are human beings trapped in illusion, unable to rely on their senses alone to discern what is real?

Two days later when I am again observing Sofia's classroom, Sofia opens the discussion by asking students about Cartesian doubt: What is it? Here, then, is what ensues:

"We see it in math. We see it in science," says Sofia. "So, what kind of special doubt does he [Descartes] [express] . . . in Meditation One?"

Students hesitate. Some offer words they recall from the assigned reading.

"Senses," offers a student seated off to one side.

And Sofia replies, "It has to do with the senses."

"The senses—It's deceived. . . . Sense deception?" Another student wonders out loud.

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<sup>1</sup>This is not a verbatim quote from *Meditations*. It is my summation of how I heard Sofia and her students enter the text, with Sofia leading students to wonder out loud what exactly Descartes was struggling with—what he was asking himself.



“That’s part of Cartesian doubt, right?” says Sofia, “It’s one of the things he doubts.”

“He doubts his whole existence,” a third student quietly interjects.

And again, Sofia confirms, “He [does] start doubting his own existence.” But now she adds, “So, what’s [his] method, though?”

In a hushed voice, a student answers, “[It’s] like breaking down, like, to the fundamentals, and then building up on, you know, what he finds is real.”

“Right,” says Sofia. Taking a comment here and there, she weaves students’ words into a picture of what Descartes is up to in early *Meditations*. “He takes our most basic beliefs,” she says. “He calls those basic beliefs into question so that [other] beliefs—built on those basic beliefs—[also] are called into question. . . . [He wants] to find the most fundamental beliefs that we can’t possibly doubt.”

Sofia pauses, then asks again, “So . . . which are those basic beliefs that he [Descartes] calls into question?”

“The senses?” Gilbert sounds like he’s guessing.

“Right . . .,” says Sofia. “Here’s a belief, for example—that I believe my senses are reliable. [But Descartes, in his doubting,] says, ‘No, my senses sometimes aren’t!’”

Continuing back and forth, Sofia asks students to name other beliefs that Descartes subjects to doubt. She then looks these over. “[Cartesian doubt],” she says, “is a theoretical form of doubt [in] which our basic beliefs are called into question . . . so that—”

Gilbert interrupts, “—to clear away uncertain beliefs to find certain ones?”

Sofia picks up. “All [such beliefs] are questioned,” she continues. “I [can] only know I am here in class today if I can know for certain that I am not dreaming . . . [that] I am not in the matrix. [But] I can’t know for certain that I am not dreaming. So therefore, I can’t really know for certain I am here in class.”

Sofia then switches gears. “[In] Meditation Two,” she says, “he [Descartes] looks around . . . ‘Well,’ [he asks,] ‘Is there anything [that] I can’t doubt?’ And . . . that,” says Sofia, “is exactly it.” She then lays out, for the first time, the point that she hopes her students will get: “The mere fact that he [Descartes] is wondering about . . . his own existence proves he is existing.” Sofia pauses. “So.” She looks at her class, “What do you think?”

Here, then, is what I see: In the opening moments of class, Sofia draws out what scholars of human cognition would call her students’ prior knowledge (Bransford, 2000; Shulman, 2004a, 2004b)—in this case, about what Descartes is thinking—that although our world feels real, it may be just a dream. With about a dozen students in class, Sofia is dealing with at least a dozen bits of “prior knowledge.” She anchors the class’s work in an image drawn from popular culture—the movie *The Matrix*—that students explain to each other.

In other words, she uses a bit of popular culture to draw together the prior knowledge that each student brings to class and discusses it in their terms.

Here and there, Sofia “marks” a student’s comment that could be useful later. She repeats it, or she asks the student to say it again, or she writes it on the board. She thereby lifts it gently above other comments without interrupting the flow of classroom talk. Sofia also lets her students struggle with ideas, like doubt, that are core to the lesson. Rather than answering her own questions, she waits until someone says something. As a student responds, she may ask that student for more, or she may create an opening for someone else to build on an idea. She also lets students interrupt her and finish her sentences. Sofia thereby pulls students into the view of doubt which, initially, she’d outlined in the barest of ways.

Sofia also capitalizes on the fact that *The Matrix* resonates with her students regardless of differences among them in other prior knowledge—academic and cultural—that they bring to the table. In this way, the movie offers a useful starting point for launching discussion of the philosophical ideas in *Meditations*.

This, then, is how Sofia, as teacher, works with her students’ prior knowledge: She brings it to the surface. She consolidates it. She nudges it forward.

### **Part 2: “Doubt”**

I have just described Sofia as working with her students’ prior knowledge by surfacing it and then nudging it forward. But nudging it toward *what* exactly? I think we’ll agree that no academic learning experience can involve only the surfacing of students’ prior knowledge. Something else enters the picture—namely, a subject-matter idea. What happens when a learner’s prior knowledge encounters an academic idea—in this case, Cartesian doubt?

Let’s return to that moment when Sofia’s students realize that the big question in *Meditations* runs awfully close to the big question in *The Matrix*. Both lead us to ask: “Are we real? Is our world an illusion?” Curious about what her students make of all this talk about doubt, Sofia asks, “What do you think?”

Sitting amid her peers, Adina speaks up. “He makes sense,” says Adina, “but it is just not working for me.”

“What do you mean, ‘It’s not working?’” Sofia asks.

“I know personally I wouldn’t. . .” Adina’s voice drops. “It’s like . . . you’ve been knowing all this stuff since, like, forever. And then, like, you’re gonna doubt it. . . Like, I can’t follow along with him because I don’t believe in that personally—”

“Yeah,” Sofia says quietly.

“—so I [just] can’t—You believe in something for so long. It’s hard—”

Sofia picks up. “It’s hard for you to call these basic beliefs . . . into question.”

Adina interrupts. “Exactly,” she says.

Sofia says back, “So you are saying, like, ‘Yeah, so it’s all well and good. He

[Descartes] is out there in the woods doubting these things—”

“Exactly,” Adina is barely audible.

“—but, like, it makes sense,” Sofia responds, “but you can’t walk— . . . You’re not going to get up and go out on the street and really wonder whether you’re dreaming or not.”

“Exactly.” Adina’s voice is now clear.

Echoing Adina, Marcos, a student off in the corner, speaks up. “When you believe a certain thing for years,” Marcos says, “you don’t just jump on [another] idea right away. It’s hard to accept it.” Marcos, like Adina before him, points out that Descartes’s kind of doubt rubs hard against what they know and what they’ve come to believe in their personal lives. That is their prior knowledge talking.

Sofia quickly responds, “Now he [Descartes] *doesn’t* [emphasis added] want us to believe that they [those beliefs we hold to deeply] don’t exist. He *doesn’t* [emphasis mine] want us to believe that we actually are dreaming. But maybe,” she says, “just admitting the possibility that it could all be a dream. . . .”

She pauses, then adds: “[It’s] not a pleasant thought.”

“It’s not comfortable,” says Adina.

And Sofia responds, “It’s not a comfortable thought, right? . . . And he [Descartes] says as much himself . . . he’s not really comfortable with this [either]. I mean, picture yourself—alone—wondering about all this stuff.”

Then turning back, Sofia adds, “He’s with *you*, Adina.”

Through this conversation, Sofia points out to Adina, Marcos, and others in class that, just as they struggle with doubt, so did Descartes. She reads out loud a passage in which Descartes explains that he feels as though he’s “suddenly fallen into a deep whirlpool. . . . [He is] so tossed about.” He can’t “touch bottom,” nor can he “swim up to the top.” Sofia looks up from her text. “What do you hold on to?” she asks, “if you’re admitting the possibility . . . [that] these long-held beliefs are all false? What [then] is there to hold on to?”

Student talk fills the room. Sofia listens, responding to one or another voice, occasionally hearing an idea that gently she repeats, speaking so others can hear but without shutting others down. She corrects still others whose thoughts seem about to lead them astray.

“I’ve got it,” Adina now firmly chimes in. “It’s, like, your beliefs [are] what makes us, us.”

“You, *you!*” Sofia’s voice rises in quick response.

“Exactly,” says Adina, “When you doubt that [your beliefs,]—”

“—you are doubting yourself in a way—” Sofia inserts.

“—and then,” Adina picks up, “when you are trying to make believe that . . . [your beliefs are] not there, it’s like . . . you’re not really—” She stops abruptly. “It’s just so *weird*. . . . I’m still not on board with this. . . . [But still] it makes sense.”

Adina and her peers are struggling, much as Descartes is struggling early in *Meditations*. Sofia wants her students to know just how closely their experiences echo those of Descartes. He battles the swirling whirlpool of confusion that threatens to pull him under, she says. “If [only] he can find something—at least something that he can hold on to, at least for a little while, that [would] help [just] a bit.” Then, without skipping a beat, Sofia, speaking as Descartes, lays out his most startling insight: “The mere fact,” she says, “that . . . I am wondering about it [my existence—doubting it] . . . that [much] I can hold on to.”

“So that is the thing,” continues Sofia, “but then he says, ‘Here is the rock. Here’s my foundation. I know I exist because I am a thinking thing. And I know that I think, I imagine things, I deny things. I have this consciousness [of my thinking, imagining, and denying.] I have this awareness. I have a mind.’ So, okay,” Sofia slows down. “So that is his rock.”

Sofia spends the rest of class that day reiterating key points from early *Meditations* as students bring them up. They give voice to Descartes’s claims about doubts, about the fallibility of the human senses, about what he—and we—can know about existence. In doing so, they talk about dreams and illusions, about how emotionally hard doubting can be, about how easy it is to be deceived by one’s senses. Sofia leads her students deeper and deeper into Descartes.

Increasingly, students refer to passages where it’s Descartes who’s saying these things. Increasingly, students converse with the text, with Descartes. They see Descartes’s struggle with his doubt. It sounds like their own. More and more, they speak to his thoughts from their own. They explore how he feels and, subsequently, how he thinks, what he comes to know, and to claim—that he thinks, and thus that he exists, as, in fact, do they. References to *The Matrix* dissipate.

### **Part 3: Coda**

The class is now nearing the end of discussion.

Again, Adina speaks up. “I have a story,” she says. “In high school, I took physics. . . . And . . . our teacher was [saying] . . . like, when you touch something . . . like you are feeling it . . . you are not really touching it. There’s still space [in-]between—”

The class again explodes into talk. “Did you know that?” one student asks another.

Describing the incredulity she’d felt in physics class that day, Adina recalls, “I was looking at him [my physics teacher] like he had ten heads!”

Sofia jumps in, “There’s still space in between—[you have] the sensation . . .”

“You feel it,” explains Adina, “but you’re not really touching it.”

The ricochet of student voices drowns out Adina’s and Sofia’s voices.

“Wait,” says a student, “you mean you’re touching, but there’s still—”

“Isn’t there, like, a rule of halves or something?” asks another, “like . . . half of half [of half] . . . You can only go half the distance of something, and then another half, and then another half.”

“Like, I’m not really touching this pen right now?” another wonders out loud.

Raising his voice, Gilbert asks, “Is that a theory, or is that proven?”

“No,” says Adina firmly, “that’s . . . for real.” And with comments swirling around her, she adds, “It is kind of like doubting yourself.”

Yet one more classmate persists, “So I don’t feel, like, the chair?”

“No,” says another, as a rush of voices fills up the room.

Sofia jumps in. “This is a different way of thinking about the chair, right? You have a sensation [of touching the chair you sit in.] But the nature of the chair is different from what our senses experience.”

“Good story, Adina!” another student exclaims.

As this final episode suggests, Adina has continued to think about the very first idea, derived from Descartes’s discussion of doubt that Sofia had initially put on the table: that sensation without thought is not a trustworthy guide to knowledge about the world. But now Adina seems less troubled by this notion. She offers the class a lesson she learned in the past: that what we experience as our hand touches an object, in fact, involves charged atomic particles in our hand *and* in that object that resist occupying the same exact space. We do not really touch that object. (For a one-minute lesson on the physics behind Adina’s claim, see “What is touch?” [Reich, 2012]). That we think we do is an illusion, a claim worthy of doubt—one, she says, that “is kind of like doubting yourself.”

Three things stand out for me in this passage:

- The presence of a subject-matter idea—Cartesian doubt—here drawn from philosophy.
- The presence of Adina’s prior personal (possibly cultural or familial) knowledge—that to doubt one’s existence is to cross the line of what one takes as real from living day to day in a world that demands clear-sightedness and sometimes, vigilance. Would you dare to go out on the street believing that what is out there is not real? “It’s just so weird,” Adina reflects on this view, while a classmate points out that to doubt in this way is to question one’s “sanity . . . what [one] thinks is true” about one’s self and one’s world.
- The presence of still more of Adina’s “prior knowledge,” this time academic in nature—a lesson from high school physics—that she accesses while contemplating Cartesian doubt in her college philosophy class.

I have, so far, shared three claims with you, all underwritten by research on the cognitive and sociocultural bases of academic learning but largely in K-12 classrooms. Let me briefly recap these claims: First, subject-matter

knowledge matters in college students' academic learning. Second, students' prior knowledge, as it bears on a subject matter to be learned, matters as well; that knowledge can be academic or personal—it may even feel sacred. Third, learning involves encounters, in students' experiences, between these two forms of knowledge.

We now must ask: What does this view of students' learning imply for good teaching in higher education? To respond to this question, I offer three additional claims:

*Claim 4:* Good teaching involves orchestrating learners' encounters with subject-matter ideas (Shulman, 2004a, 2004b).

*Claim 5:* Good teachers know how to create classroom conversations that support students in surfacing what they know already—their prior knowledge as it bears on their learning of a particular subject-matter idea (Bransford, Brown, & Cocking, 2000; Shulman, 2004a, 2004b). Two features of such conversations are respect and care. Both matter when students' prior knowledge is deeply personal (Delpit, 2006; Ladson-Billings, 1995; Lampert, 2003).

*Claim 6:* Good teaching supports students in working through the cognitive and emotional features of encounters between their own long-held understandings and new ones that texts and teachers help them glimpse (Ladson-Billings, 1995).

I think we saw these three claims play out in Sofia's teaching and especially in her interactions with Adina.

### IMPLICATIONS FOR POLICY

I've now suggested what I think we should know about learning in higher education, and a bit about teaching, too. But if our goal is to expand the freedom to learn, the message cannot stop with us. College teachers, of undergraduates especially, are an important audience for this view of learning and of teaching. But so are many others: faculty professional development experts, academic administrators, policymakers, and members of the general public, including voters, taxpayers, employers, and the family members of college students. Let's look at what some of these higher education stakeholders think that learning and teaching involves.

The teaching and learning experts who staff faculty and instructional development centers on campuses throughout the United States emphasize ideas like active learning, engagement, and community. These ideas are configured as advice to faculty such as: "Implement active learning that will engage your students," or "Create a classroom community that inspires both active learning and engagement."

A scholar treating active learning, engagement, and community as the key ideas about learning in higher education also could have written up the Sofia-Adina case. But that version would likely be different from the case I just shared. It might sound something like this:

The students in Sofia's class are involved. They talk excitedly to one another, and the room is alive with a background hum of voices. The students are energized and focused, emotionally attentive. Students argue, or they laugh together in ways that break up the serious material. But at times, they join conversationally to work through tough ideas. Students voice their opinions and ask questions. Sofia encourages students to talk, and lets students interrupt her. At times, she herself stops mid-sentence to listen. The room has a caring and democratic feel to it. Public voice seems to matter. This is an active and engaged democratic learning community.

It is a good story. But this second version of the case is missing a few things. It says very little about the subject matter that Sofia is striving to teach or that students are striving to learn—namely, Descartes's philosophical thought, and its meaning in the modern world. In other words, we do not know what texts or ideas frame the classroom conversation. We do not know *what* Adina and her peers are talking about. We do not know the substance that spurs their excitement. Without awareness of the subject matter, we cannot know what it is about Descartes that bothers Adina—only that something probably does.

What this small exercise shows is that it is not enough for faculty development experts—or higher education researchers—to say that students are engaged in class. *What* they are engaged with—and *how* they engage it—matter still more. Accepting this view makes both research and professional development infinitely more complex because it demands far more attention to the *content of the ideas* that college teachers are teaching and college students are learning. To study Sofia and Adina, I myself had to read and closely study Descartes!

Although conceptions of active learning, engagement, and community have historically been helpful, I think it is absolutely critical that we now make a cognitive turn toward thinking about classroom teaching and learning relative to subject-matter content. If we should do so, we may need to forge collaborations with disciplinary subject-matter experts. I think I did okay with introductory philosophy. But I might not do as well studying the teaching and learning of differential equations or art history. I'd need a collaborator in those fields to work closely with me.

Now, let's look at how policymakers—especially government officials—define postsecondary learning and teaching. It seems likely that *their* prior knowledge shapes the policies and practices which can either support or hinder the kind of teaching and learning I've shown you. I waded through eight years of the public statements of Margaret Spellings and Arne Duncan, the former and current U.S. Secretary of Education, along with other relevant documents like the Spellings Commission Report (Duncan, 2012a, 2012b; U.S. Dept. of Education, 2006). Here's my distillation of the ideas they hold dear:

Higher education exists to enhance the quality of the U.S. labor market, and to enable students to develop lifelong skills to adapt to and compete in a changing global knowledge economy. College access and degree completion are paramount. Learning outcomes, indicated by broad tests of students' knowledge and skills, also are important to holding institutions of higher education accountable, as are cost containment, productivity increases achieved through technology, and transparency. The most important thing that the federal government can do is to provide information on how institutions are succeeding at these goals, so that students and families as consumers, and states as funders, can make rational choices about their investments in higher education.

Teaching and learning get surprisingly little attention in this policy discourse. Worse, in my view, college teachers and learners—like Sofia and Adina—are silent. They are invisible. Their struggles do not seem to matter. I have no way at all to translate what Adina and Sofia do and think and feel and accomplish into a language of “what counts” in the current policy landscape. This is not to say that current policies are bad, or that we should ignore the features of the higher education system they focus on. It is to say that this picture is incomplete and that we might be better off if policymakers were to engage with still other representations of teaching and learning, in addition to those we often hear.

Those of us who can help policymakers understand the efforts of Sofia and Adina—and many others like them—should deploy our very best efforts to do so. And it is not just federal officials such as Arne Duncan on whom we should focus these efforts. There are thousands of federal and state legislators, governors, and their staff members who bring to their work a conception of learning in higher education which shapes the stances they take, the programs they fund or disband, and the laws they enact that will either support or frustrate the efforts of teachers and learners like Sofia and Adina. And a broad conception of policymakers surely must also include the thousands of college presidents, deans, and department chairs across the country who might benefit from a new conception of learning in higher education.

But there's at least one more audience to tap. The American public is more curious than ever before about what goes on inside the black box of college and university functioning. Higher education is on people's minds in ways we've never seen before.<sup>2</sup> What worries me is that what's on the minds of

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<sup>2</sup>One indicator of the public's growing attention to higher education is the media's expanding coverage of postsecondary issues over the past two years—for example, through feature stories, widely read editorials, and popular advice columns. Recently addressed topics include the quality of undergraduate education (“Opinion Journal,” 2011); increasing costs of attending college (*Huffington Post* writers, 2011–2013); cumbersome and/or ineffective university governance and leadership (University of Virginia, 2012); and university leaders' tolerance of and failure to intervene in cases of sexual abuse and injury on campus (Penn State, 2011).



the general public—and of the journalists who inform them—has virtually nothing at all to do with the deep and important work that Adina and Sofia are up to in class. Adina and Sofia remain invisible to what is, perhaps, the most important audience of all: the American public.

I think that it matters a lot that those of us who study teaching and learning in higher education orient our research to account for the power of a subject of study—well taught—to shape a learner’s mind and to chart a fulfilling life. I also encourage those among us who study other higher education topics—like organization, leadership, policy, student affairs, finance, the law, and more—to ask a simple but important question: What might my research offer to Adina’s struggles to learn, and to Sofia’s attempts to guide and support Adina’s efforts?

It is time for our field, collectively, to stake a claim on the learning that we ourselves have experienced in higher education—the learning to which all of us have dedicated our work, our careers, and our lives.

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