

JOHN DEWEY SOCIETY: 2014 PAST PRESIDENT'S PANEL

REPRESENTING DEWEY'S
CONSTRUCTS OF CONTINUITY
AND INTERACTION WITHIN CLASSROOMS

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ABSTRACT

As a philosopher, Dewey relied on others to represent and realize the practical implications of his ideas for classroom life. While many educators have ably done so, the empirically grounded markers and measures that Dewey saw as necessary for strengthening progressive practice and communicating with the broader field remain underdeveloped. Here, I review Dewey's naturalistic view of intelligence and his call for progressive forms of educational assessment as background for my consideration of how one might employ classroom discourse analysis in order to represent characteristic features of Dewey's two central dimensions of educative experiences—*continuity* and *interaction*—in practical terms.

Continuity and interaction in their active union with each other provide the measure of the educative significance and value of an experience.

—*Experience and Education* (Dewey 1938, 44–45)

INTRODUCTION

In *Experience and Education*, John Dewey seeks to portray the intellectual dynamic at the heart of his notion of educative experience and speaks to the challenges of nurturing this form of human vibrancy within schools. As the quotation above reveals, Dewey maintains that an *active union* between what he calls *continuity* and *interaction* “provide[s] the measure of the educative value and significance of an experience” (1938/1997, 44–45). How are we to make sense of this strikingly unconventional characterization of democratic educational purposes? In what practical terms might such a union be recognized?

Below, I consider these questions in relation to my own research on patterns of verbal interaction between teachers and students within classroom discussions (Mayer, *Classroom Discourse and Democracy*, 2012). In that research, I have sought to identify and theorize distinguishing attributes of what I characterize as “distinctively democratic” pedagogical discourse. Although the origins of this research extend beyond my studies of Dewey's writings to the contested pedagogical landscape

within the United States across the past fifty years, the project can nonetheless be seen to respond to a call Dewey makes in *Experience and Education* to translate progressive pedagogical values and understandings into widespread practices and procedures capable of reliably representing and assessing the educative worth of classroom experience.

To begin, I turn to evolutionary theory to ground Dewey's use of the terms continuity and interaction in relation to his naturalistic notion of intelligence. Second, I return to an earlier work of Dewey's, *The Source of a Science of Education* (1929), in order to consider Dewey's views regarding the need for progressive forms of educational research and assessment. In view of these two discussions, I then present my work in classroom discourse analysis, which responds to what I interpret to be Dewey's call for broadly recognizable signs of what he termed continuity and interaction within classroom discussions.

DEWEY'S NATURALISTIC CONCEPTION OF INTELLIGENCE

Jerome Popp (2007) has called Dewey "evolution's first philosopher," and it serves our purposes to consider Dewey's notions of continuity and interaction in light of his lifelong commitment to viewing human growth and learning through the lens of evolutionary theory. Along with Darwinian-minded psychologists of his time, Dewey came to view the cultural advance of our species as necessarily depending upon the intentional cultivation of human intelligence, which like any living system, could be seen to display characteristic signs of healthy and unhealthy growth.¹ As evolutionary theory was seen to have undermined all a priori moral truths, these scholars turned to the interdisciplinary study and theorizing of the human psyche, as expressed through various forms of human relationships and social structures, to ground normative claims (Dewey 1922/1930; see also Mayer 2010, "Dewey's Dynamic Integration of Vygotsky and Piaget").

As Popp (2007) notes, Dewey's interest in characterizing and promoting the healthy growth of human intelligence can be reasonably viewed as more fundamental to Dewey's worldview than his interest in democracy, as Dewey identified a dynamic and satisfying expression of human intelligence as the underlying good that argued for democratic forms of association as an original matter. Dewey maintained that human history had demonstrated that the "better quality of human experience" (1938/1997, *Experience and Education*, 34) progressives sought relied upon defining democratic commitments such as free intellectual expression and a belief in the equal worth of all (1900, *The School and Society*; 1902/1990, *The Child and the Curriculum*).

Consonant with his naturalistic perspective on growth and learning, Dewey at times employed developmental processes as metaphors for his notion of educative experience. In *Experience and Education*, Dewey (1938/1997) references an infant's struggle to walk in order to suggest the focused field of engagement and

steady, determined expansion of personal capacity that he means to evoke with the terms interaction and continuity, respectively. During attempts to stand and walk, a child's native resources, including his or her impulse to do so, are in continuous interaction with the restrictions and affordances of that child's immediate natural and social worlds; in normally developing children, this cycle of exertion and response continuously repeats itself until the child learns to stand reliably and to proceed across the floor without falling.

Dewey believed that progressive educators could craft learning experiences that invited equally absorbing forms of exploration and promised equally exciting experiences of mastery by harnessing the natural drives of children in the service of socializing them to valued cultural activities and norms. In many places within *Experience and Education* and his other works, Dewey emphasizes the necessary role of natural drives in inspiring and sustaining a continuous quality of growth, arguing that growth can only *be* continuous if it unfolds in response to the learner's immediate concerns and emergent capacities. In the same breath, Dewey also stresses that progressive educators should continually seek out opportunities to marshal those drives in the interest of furthering their students' "continuous development of power" (1938/1997, *Experience and Education*, 58).² With this use of "power," Dewey is referencing his conception of cultural power—the learned capacity to draw upon social cues and cultural resources in order to act effectively and to make discriminating observations and balanced judgments.

Dewey's use of "power" can be seen to align with his conception of intelligence as developed in *Democracy and Education* (1916/1944) and elsewhere. Dewey: (1) recast human intelligence as the capacity to read and interpret one's enculturated world and to work creatively and effectively in the pursuit of culturally constructive goals; and (2) proposed that we evaluate intellectual capacity according to the quantity and quality of shared aims, understandings, and coordinated actions a person is able to construct with people from diverse social, professional, and cultural worlds.

When Dewey speaks of interactions, then, he is speaking about socially constructive, multivalent transactions between learners, diverse others, and significant features and phenomena of their shared worlds.³ So, although a key aspect of Dewey's notion of interactions originates with the interactions of the natural world, Dewey purposefully moves beyond the natural world into the domain of the social, which he theorizes *as natural* to human beings. Dewey therefore suggests that educators think in terms of teaching their students to move comfortably, capably, and confidently within their social and cultural worlds, both as autonomous intellectual agents and as valued members of these larger wholes.

Dewey's naturalistic conception of intelligence can be seen, in these ways, to inform our understanding of continuity as characterizing the driven, incremental, and ultimately integrated growth of cultural sensitivity and expertise, and interaction as characterizing the dynamic processes through which cultural sensitivity and

expertise are achieved: namely, vibrant transactions between the “personal needs, desires, purposes, and capacities” of the developing child (Dewey 1938/1997, 44) and the enculturated world, as represented by the social, psychological, and intellectual life of the classroom. Sounding themes he developed throughout his life, Dewey therefore urges progressive teachers to orchestrate students’ explorations of their lived worlds in a manner that continuously supports their personal appropriation of the social, material, and conceptual resources of their culture.

ASSESSING EDUCATIVE SIGNIFICANCE AND VALUE

When Dewey speaks of the active union between continuity and interaction providing the “measure” of an educational experience’s significance and value, he is not using that word in as vague or abstract a sense as one does, for example, when speaking of “taking the measure of a man.” When viewed against his broader argument in *Experience and Education*, Dewey can be seen as calling on progressive educators to craft methods for assessing the educative significance and value of classroom experiences in broadly recognizable terms. Dewey firmly believed that progressive educators would need new forms of educational research and assessment devoted both to improving progressive school practice and to representing the methods and outcomes of progressive practice to traditional educators in clearer and more convincing terms—a pair of goals that he viewed as intertwined and essential to progressive purposes.

Given Dewey’s naturalistic—and therefore holistic—understanding of learning and learning environments, he insisted that any activity that went by the name of *educational* research must begin and end with situated questions of practice. In opposition to the behaviorists, whose reductionist methodology derived from animal research, Dewey viewed isolated psychological experiments as only tangentially relevant to the study of democratic classroom practice, which he repeatedly insisted must be rooted in the methodical and multiperspectival study of enacted experience. He therefore called for educational researchers to collaborate with practitioners in the design and realization of their methods and when considering the practical implications of their resulting findings and theories.

In his first chapter of *The Source of a Science of Education* (Dewey 1929, 7–25), Dewey carries his concerns with the continuous growth of understanding and with vibrant intellectual interaction into what he positions as the interpenetrating worlds of educational research and practice:

There is an intellectual technique by which discovery and organization of material go on cumulatively, and by means of which one inquirer can repeat the researches of another, confirm or discredit them, and add still more to the capital stock of knowledge. Moreover, the methods when they are used tend to perfect themselves, to suggest new problems, new investigations, which refine old procedures and create new and better ones (9).

Such methods, Dewey explains, can only provide “intellectual instrumentalities,” which must then be sensitively interpreted and theorized in order to address complex issues of practice (1929, 28). Yet such instrumentalities serve to “*direct [the teacher’s] attention* in both observation and reflection” (29). Good educational research, in other words, focuses researchers’ and practitioners’ joint attention on demonstrably significant dimensions and phenomena of classroom life, and methodologically informs their individual and collective efforts to understand them in new ways.

Yet, as “the significance of one factor for educational practice can be determined only as it is balanced by many other factors” (19), multiple lines of consideration must be placed into thoughtful relation in order to characterize the character of classroom practice with adequate nuance and perspective.⁴ No single dimension of practice can effectively represent the overall quality of classroom life regardless of how significant that dimension might be; rather, multiple forms of observation and assessment must always be joined in any comprehensive effort to evaluate the educative significance and value of classroom interactions.⁵

Eighty-five years later, empirical indicators of characteristic progressive pedagogical practices and outcomes remain underdeveloped within the U.S. context, where behaviorist constructions of the visible and the reliable continue to structure terms of engagement within top-tier research venues. Although narrative forms of classroom research related to ethnographic methods have continued to provide evocative and empirically grounded portrayals of school and classroom life in the decades since Dewey’s death, the reliable markers of distinctively democratic classroom practices that Dewey also sought have proven elusive.

SEEKING RELIABLE MARKERS OF CONTINUITY AND INTERACTION

As we have seen, Dewey believed that what he called continuous learning must be directed in part by the learner—in accordance with the learner’s present confusions, capacities, and understandings—while also being organized by intellectually challenging interactions with a teacher, peers, and pedagogically generative artifacts and phenomena. We will now turn to a discussion of how classroom discourse analysis can help to reveal the extent to which students are contributing to the direction of a learning experience and are engaging in educationally significant interactions.⁶

While even simple quantitative measures can provide telling markers of interactional vibrancy in classrooms,⁷ more sensitive analyses naturally become possible when analysts shift to considering the ways in which teacher and student contributions work together to construct and ratify content understandings across the course of a classroom discussion.⁸ Yet such a shift also generates a potentially overwhelming wealth of discursive data, as the contributions that people make in relatively high-stake contexts such as classrooms typically represent complex mixes of social, psychological, and intellectual purposes and understandings. The

interactional patterns through which shared understandings are constructed within classrooms can therefore be considered from a significant number of pedagogically relevant and (again) interdependent perspectives.

We are interested here in the parts that students assume in organizing the content of the discussion and in the extent to which, and manner in which, they interact with their teacher, peers, and significant artifacts and phenomena in the process of constructing classroom understandings. I have therefore proposed that classroom researchers might usefully begin by clustering all topically relevant speech spoken by either teacher or students into three broad categories. These categories correspond to what I have proposed to be the three essential phases of any collaborative knowledge construction process: (1) *framing* topics and issues for consideration; (2) *developing* thoughts, theories, and representations that engage those topics and issues; and (3) *evaluating* those thoughts, theories, and representations against shared standards of reasoning and respected forms of evidence and experience (Mayer 2009, 2012).

As a research lens, the framing/developing/evaluating (FDE) analysis raises the following three central sets of questions regarding the roles students have assumed in the construction of content understandings:

- Within what subject areas and to what extent can students be seen generating some of the questions and issues that organize class deliberations?
- Within what subject areas and to what extent can students be seen clarifying and elaborating upon their ideas over time and explaining how they have come to view the issue in this manner?
- Within what subject areas and to what extent do students study artifacts and phenomena together in order to locate evidence for their views and theories and discuss why they believe that evidence supports claims they have made?

Considerable research has demonstrated that, in most classrooms, teachers primarily *frame* the questions and then *evaluate* the ideas their students generate during what I am calling the *developing* phase (Cazden 2001; Mehan 1979; Wells 1999).⁹ As everyone familiar with this type of traditional pedagogical encounter will recall, the teacher begins by asking a question designed to elicit a more or less predictable range of student responses. As students respond, the teacher uses what discourse analysts call “feedback moves” in order to steer students toward those responses seen as most promising.¹⁰ By actively participating in what serve, in effect, as staged reenactments of established lines of thought, students are provided with opportunities to take up those lines of thought, as well as the ratified understandings to which they lead, and to incorporate these into their own intellectual repertoires.

Yet experience has shown that continuity of student learning is often compromised. No classroom teacher can sensitively scaffold the emergent understandings of every student during such a discussion because any group of students will

grapple with a teacher's claims and reasoning from a great variety of intellectual perspectives based upon their ultimately unique developmental, cultural, and experiential histories.¹¹ This illimitable intellectual diversity reliably results in some students more readily viewing the world from the teacher's perspective, thus more easily making sense of her or his reasoning and claims. This variance in the capacity of students to anticipate the kinds of contributions the teacher is seeking standardly leads, in turn, to uneven levels of participation and motivation among students over time, even assuming comparable initial levels of interest and good will from all parties.¹²

Also, because the teacher is positioned as the preeminent source and final arbiter of all that is to be seen as valid and true, even those students most able to interpret and respond to the teacher's purposes are required to move through the teacher in order to have their ideas ratified, either in their entirety or possibly after having been modified in what the teacher views as the necessary ways. As a result, the multivalent interactions Dewey calls for tend to narrow to dyadic exchanges between the teacher and those students who see themselves (and are seen) as most capable of responding in the desired ways.

The natural impulses that Dewey saw as necessarily driving and directing all continuous learning, such as intellectual curiosity and the longing for a sense of cultural inclusion and competence, are likely to be tapped quite unevenly in such circumstances. In particular, students' intellectual curiosity may be replaced altogether with a desire to succeed in the teacher's terms, even among those seen as most likely to do so. Others may lose interest in performing according to such terms altogether. This lack of interest can then lead to a resistance to persevering in intellectually challenging circumstances and, ultimately, to feelings of cultural exclusion and incompetence. Also, because intellectual capacity is increasingly seen as the capacity to understand the teacher's purposes and reasoning, students' natural impulses to interact with each other and to explore their own ideas about the world can be thwarted.¹³

On the other hand, and as Dewey also argued, students left to pursue their every passing interest or musing without receiving thoughtful feedback and clear standards against which to evaluate their emergent ideas and creative work can quickly sense the impotency of their efforts, and can therefore, again, lose interest prior to their meaningful intellectual engagement. So, while a pedagogical commitment to inviting students to *frame* the terms of their intellectual endeavors can open up important opportunities for them to organize their learning in accordance with their own concerns and capacities, this commitment alone will not necessarily lead to the kinds of intellectually provocative interactions that Dewey also saw as necessary.

Such interactions are most likely to occur in an environment wherein students are challenged to develop their ideas and productions in response to the thoughtful comments and queries of others, and are empowered to evaluate them based

upon shared standards and evidence available to all. If we return to Dewey's metaphor of a child learning to walk, we can see that needed sources of feedback and support are generally in place. The natural world not only provides every healthy child with an inborn impetus to walk, it also provides a continuous stream of uncompromising feedback in response to the child's every effort to do so. Meanwhile, those who comprise the child's social world generally strive to ensure the child's physical safety, to sooth the child's frustration over inevitable failures, and to provide thoughtfully targeted resources—such as an outstretched finger—to support the child's efforts and to extend his or her emergent capacities. Without the interactional feedback and support, normal physical development will be delayed and potentially compromised.

In a related manner, in sensitively building upon students' natural curiosity with conceptually provocative and developmentally appropriate explorations, and by scaffolding students' ability to assess their own efforts in relation to clear goals, educators optimize conditions for their students' intellectual development and growth. By drawing attention to the necessary interaction between all three phases of knowledge construction processes, the framing/developing/evaluating (FDE) lens also implicitly draws attention to this integral pedagogical relationship between (1) establishing engaging impetuses for inquiries, (2) sustaining genuine intellectual struggle, and (3) holding everyone accountable to meaningful and transparent standards. Each of these three pedagogical challenges must be effectively addressed in order for learning to be both continuous and interactive in Dewey's terms.

So, in addition to enabling systematic study of the character of student participation across the three phases, the FDE lens also invites consideration of the ways in which progressive teachers have likely always worked, to varying degrees, to inspire and support their students' efforts to construct new understandings. Recent analyses of classroom talk have repeatedly demonstrated that teachers comfortable with collaborative knowledge construction processes work in recognizable ways to engage their students' intellects and to extend and deepen their thinking. For example, this research has shown that such teachers continually ask their students to clarify and expand on their thinking, and may also ask them to explain how they arrived at a particular idea or theory or to compare what they are thinking to what someone else just said. Such teachers have also been found to delay and to make fewer (if any) evaluation moves in order to create space for students to reconsider their own thinking in view of what others say and in relation to available evidence (e.g., Ballenger 1999, 2009; Lampert 2001; Mayer 2009, 2015; Michaels and O'Connor 2015; O'Connor and Michaels 1996; O'Connor et al. 2008, 2015).¹⁴

The FDE lens can serve in the further analysis and theorizing of these characteristic teacher moves. Perhaps most notably, categorizing such moves according to the three phases of knowledge construction can enrich our understanding of the ways in which various moves work to provoke intellectual activity during each

individual phase and in relation to the teacher's broader pedagogical purposes. Such analyses might eventually lead to research on the extent to which distinctive sets of moves can be seen to generate active intellectual interactions across the three phases within the different subject areas. Such research stands, in turn, to inform theorizing on how to inspire students to engage with different phases of the knowledge construction process, and also what phases of different disciplinary modes of thought might be usefully taught at what ages. For example, when might students first start thinking meaningfully about science as a field of inquiry and about what it means to frame a specifically scientific question in contrast to other kinds?

The concept of *interpretive authority*, which builds upon the FDE analysis, provides a broader angle on the work of repositioning students as active intellectual agents within classroom knowledge construction processes (Mayer 2009, 2012). Within classrooms, the concept of interpretive authority speaks to a person's authority to construct content understandings. Per the discussion above, this would mean that a person has the authority to participate across all three phases of the knowledge construction process: framing lines of inquiry, developing ideas in response, and evaluating those ideas based upon evidence available to all. In contrast to the FDE lens, which is intended to support close analysis of individual discursive moves and discourse move patterns, the concept of interpretive authority raises the more general question of who has been authorized to construct which content understandings and on what basis, encouraging educators to think beyond the authority of teacher and textbook when considering the reliable grounds upon which classroom understandings might be established.¹⁵

The idea of granting students some measure of interpretive authority relates to Dewey's naturalistic conceptualization of human intelligence. Young people will need to be given opportunities to construct some of their own understandings before they are likely to achieve a sense of themselves as intellectually attuned and capable cultural members. To the extent that students are asked to frame their own questions, develop original ideas and work, and evaluate those ideas and that work on their own authority, their interactions within any academic field stand to become more personally relevant, increasing the possibilities that they will come to find that field's perspective, tools, and acquired understandings useful and engaging in their post-school lives. Such a result directly responds to Dewey's call to increase the cultural power of all students by multiplying their intellectual connections to their worlds.

IMPLICATIONS

The 1938 publication of *Experience and Education* saw Dewey continuing to call on educators, years after his own direct involvement with the world of school practice had ended, "to work out the kinds of materials, of methods, and of social relationships" that might inspire deep intellectual engagement and build toward an enduring sense

of personal capacity and cultural membership for all students (Dewey 1938/1979, 29). Since then, many educators have successfully pursued these purposes, and it is critical that contemporary educational researchers find ways of representing these efforts and their outcomes within the broader fields of learning and curriculum theory.

As the classroom discourse analysis field is now demonstrating, discourse study can contribute to this project by revealing the underlying patterns through which ratified content understandings are constructed in classrooms, allowing theorists to build toward more richly elaborated models of democratic classroom practice.¹⁶ While Dewey's conceptions of continuity and interaction can clearly never be felicitously reduced to any finite set of objective markers, discourse theorists are now able to represent reliable signs of more and less student-directed and intellectually interactive classroom discussions and to analyze the discursive dynamics that help to support meaningful intellectual interaction—always bearing in mind that such efforts must be seen as partial.

As part of this larger project, I have proposed that educators interest themselves in the extent to which students are being asked to *frame* their own questions and are being challenged to *develop* and *evaluate* ideas in their own terms, as well as in terms that the broader society recognizes as culturally sensitive and fluent. Whether employed as an informal heuristic or as a more fully articulated research instrument, the FDE analysis can encourage educators to reflect upon the ways in which the authority to frame inquiries and to develop and evaluate understandings has been constructed (and the extent to which an uncritical deference to the authority of the teacher and text has been deconstructed) within different classroom practices.

The FDE lens can also support systematic consideration of the discursive features that different kinds of lessons do and do not share, providing needed resources for the exploration of the relationship between various forms of learning experience. While a default reliance on teacher authority can compromise the continuity of student learning and clearly does limit the types of intellectual interactions that can occur in a classroom, students can hardly be expected to construct all of the understandings they must master in their school careers themselves.¹⁷

Comparative study of the knowledge construction patterns underlying various traditional and less traditional forms of classroom knowledge construction processes—as these unfold within classrooms—stands to enrich the theorizing of the pedagogical affordances and constraints of contrasting forms of lesson in relation both to the field's evolving understandings about learning and defining democratic values. In turn, such empirically based theorizing promises to deepen and extend disciplinary debates regarding the role of schools in our society. Particularly in these sharply contested times, when politicians and policy makers have turned overwhelmingly to standardized test scores to assess educational quality—despite the well-theorized limitations of such scores and the scientific inadequacies of relying on solitary assessment instruments—the need for additional empirically grounded conceptions of educational quality has only grown more urgent.

As Dewey (1938/1997, 205) put it, the field needs to develop empirically grounded “intellectual instrumentalities” that enable educational researchers to identify, document, and study the many diverse features and outcomes of distinctively democratic pedagogical practices. For only a robust collection of replicable forms of data collection and analysis will support comparative studies of such practices and generate substantive debate across ideological boundaries. As Dewey long ago recognized, there can be no single or even preeminent measure of educative significance and value—or of educational equity and intellectual freedom, for that matter. The FDE analysis and the construct of interpretive authority it supports simply provide one useful methodological lens for democratic practitioners and researchers to employ as they work toward establishing intellectually engaged and vibrantly interactive classroom cultures for all students.

CONCLUSION

In *Experience and Education*, Dewey positioned the notions of continuity and interaction into a dynamic and interpenetrating relation and claimed this relation as the living soul of what he called educative experience. The challenge for today’s progressive educators remains to recast this evocative abstraction into broadly recognizable terms and purposes for a philosophically divided world. For reasons Dewey recognized and explicated, contemporary democratic educators interested in engaging this challenge must mine the very same cultural grounds that Dewey turned to a century ago: democratic values and a pragmatically conceived approach to educational research.

In fostering their students’ informed and responsible use of the interpretive authority that is their due as democratic citizens, educators help to nurture their students’ continuous growth into capable, committed, and intellectually independent members of their democratic society. Regarding the democratic value of intellectual freedom, Dewey rather unequivocally stated that “[t]he only freedom that is of enduring importance is freedom of intelligence, that is to say, freedom of observation and of judgment exercised in behalf of purposes that are intrinsically worthwhile” (1938/1997, 61). Among Dewey’s innumerable contributions to the field of democratic educational theory, this understanding of a personal sense of intellectual freedom as central to the realization of democratic purposes, and his unshakable belief in the cultural possibilities of enlivening the intellects of every citizen, underpins all the rest.

As Dewey also argued, the democratic prospects of any society rest in large measure upon the capacity of its educators to represent and enact democratic values, purposes, and practices within that society’s schools. Educators’ ability to be effective in this work relies in turn on the clear-sighted capacity of educational policy makers to attend to the field’s developed expertise in these areas, and to support the growth of practices that can advance defining democratic values and purposes on the ground. Children’s school experiences not only shape their intellectual

relationships with their worlds, they also shape their feelings and attitudes toward their larger society and its public institutions. Given generous opportunities for continuous intellectual growth and empowering academic interactions, children are more likely to embrace their lives within schools and gradually come to experience themselves as valued agents of their greater society's defining democratic purposes.

NOTES

1. Dewey recognized early that in a post-Darwinian world, all life must be seen as continuous and in interaction, and that Western philosophers had erred in erecting conceptual barriers between humans and the natural world and between human reason and feeling.

2. John Dewey, *Experience and Education* (New York: Simon & Schuster, 1938/1997). Dewey sounds several notes here that those who have participated in progressive schools will recognize as based on his personal experience of progressive school culture. For example, he reminds his readers that the development of social manners supports human interaction in important ways (59–60), and that allowing for students' physical movement within a classroom does not, in and of itself, ensure their intellectual interaction or growth (62–63).

3. While a discussion of the kinds of materials progressive educators have employed to represent such features and phenomena within classrooms lies beyond the purposes of this paper, it bears mention that Dewey viewed such materials as essential pedagogical tools. See philosopher of science David Hawkins's book, *The Informed Vision*, on the pedagogical importance of interacting with the natural and cultural worlds, particularly his essay "I, Thou, and It" (2002, 51–64).

4. See Magdalene Lampert, *Teaching Problems and the Problems of Teaching* (New Haven, CT: Yale University Press, 2001), 9–27 for her analysis of this insight based on her extensive experience teaching and studying the teaching of math in primary schools.

5. I have elsewhere argued that all structural analyses should be paired with narrative characterizations of practice in classroom research due to the psychological and sociological complexity of classroom environments. I call this pairing *dynamic structuralism* after related work in the field of developmental psychology. See Susan Jean Mayer, *Classroom Discourse and Democracy: Making Meanings Together* (New York: Peter Lang, 2012).

6. Discourse analysis was first formalized as a method within the tradition of British empiricism; classrooms were an early setting for this research. Prominent names associated with these origins include J. R. Firth, Michael Halliday, and John Sinclair.

7. For example, the teacher will have spoken more briefly and often less frequently (though teachers who continue to recognize students verbally generate a high volume of very brief teacher turns), students will have spoken at greater length, and a higher percentage of students will generally have spoken. Straightforward quantitative analyses have also revealed other pedagogically significant patterns, such as individual students taking multiple extended and sequential turns—generally in response to a teacher's prompts to elaborate upon and more clearly articulate their thinking—and uninterrupted sequences of student turns—reflecting periods in which students have begun to address each other directly and to build upon each other's questions and observations without teacher intervention (e.g., Mayer 2009). Simply by calculating the percentages of teacher and student talk, then, and analyzing the pattern and lengths of teacher and student contributions, analysts can make a rudimentary assessment of the extent to which students have been invited to collaborate in the construction of classroom understandings.

8. Hugh Mehan, *Learning Lessons: Social Organization in the Classroom* (Cambridge, MA: Harvard University Press, 1979). Mehan seems to have been the first to argue that classroom discourse analysts should therefore include topic development as an essential area of consideration for this reason.

9. Courtney Cazden, *Classroom Discourse: The Language of Teaching and Learning* (Portsmouth, NH: Heinemann, 2001); Mehan 1979, *Learning Lessons*; Gordon Wells, *Dialogic Inquiry: Towards a Sociocultural Theory and Practice of Education* (Cambridge, UK: Cambridge University Press, 1999). The framing/developing/evaluating (FDE) analysis conceptually extends a well-known analysis—the initiation/response/feedback (IRF) sequence—which two linguists first identified four decades ago (see John Sinclair and Malcolm Coulthard, *Towards an Analysis of Discourse* [London, UK: Oxford University Press, 1975]). In the course of studying teacher and student turns within classroom transcripts, these linguists noticed a recurring sequence: (1) a teacher would *initiate* a line of inquiry with a comment or question; (2) a student would then *respond* to the teacher's initiation; and (3) the teacher would provide some form of *feedback* regarding the student's response (the IRF sequence). These linguists found this three-part move sequence to occur so frequently within the classroom transcripts they studied that they assumed it characterized pedagogical discourse in general terms. The FDE analysis shifts from the realm of three-part move sequences to the notion of knowledge construction phases, which can unfold in innumerable move sequence patterns and across varied time scales.

10. In order for a shared set of content understandings to be established, the teacher must eventually identify what is to be seen as correct, though such evaluations are commonly postponed in order to encourage greater involvement in the developing phase.

11. An extended discussion of this point is provided in chapter two of my 2012 text, *Classroom Discourse and Democracy*.

12. In many classrooms in this country, of course, comparable initial levels of interest and good will can hardly be assumed. U.S. public schools have historically educated a more culturally diverse group of immigrant students than most other nations, resulting in pressures that Dewey sought to address, among them the sad reality that some students have always found themselves positioned as less likely to succeed by their culturally mainstream teachers based merely on cultural prejudice. In this past half century, social tensions resulting from the nation's racial integration of public schools have also all too often led to culturally mainstream teachers viewing their racialized students with skepticism and distrust.

13. See the final chapter in my 2012 book for a more developed discussion of the relevant motivational issues (Mayer, *Classroom Discourse and Democracy*, 2012).

14. Cindy Ballenger, *Teaching Other People's Children* (New York: Teachers College Press, 1999); Lampert 2001, *Teaching Problems and the Problems of Teaching*; Mayer 2009, "Conceptualizing Interpretive Authority in Practical Terms"; Susan Jean Mayer, "Building Toward Cogent Reasoning Across the Curriculum," paper presented at the American Educational Researchers Association Annual Meeting, April 16–April 20, 2015, Chicago, Illinois; Sarah Michaels and Catherine O'Connor, "Conceptualizing Talk Moves as Tools: Professional Development Approaches for Academically Productive Discussions," in *Socializing Intelligence Through Academic Talk and Dialogue*, edited by Lauren B. Resnick, Christa Asterhan, and Sherice Clarke, 347–62 (Washington, DC: American Educational Research Association, 2015); Catherine O'Connor and Sarah Michaels, "Shifting Participant Frameworks: Orchestrating Thinking Practices in Group Discussion," in *Discourse, Learning, and Schooling*, edited by Deborah Hicks, 63–103 (New York: Cambridge University Press,

1996); Catherine O'Connor, Sarah Michaels, and Lauren Resnick, "Deliberative Discourse Idealized and Realized: Accountable Talk in the Classroom and in Civic Life," *Studies in Philosophy and Education* 27 (2008): 283–97; Catherine O'Connor, Sarah Michaels, and Suzanne Chapin, "'Scaling Down' to Explore the Role of Talk in Learning: From District Intervention to Controlled Classroom Study," in *Socializing Intelligence Through Academic Talk and Dialogue*, edited by Lauren B. Resnick, Christa Asterhan, and Sherice Clarke, 111–26 (Washington, DC: American Educational Research Association, 2015). In particular, classroom discourse analysts Catherine O'Connor and Sarah Michaels have worked to characterize a set of pedagogically effective discursive moves that they have found teachers commonly employ in their efforts to prompt and sustain student reflection and to ensure that students deliberate in accordance with academic standards of reasoning and evidence.

15. Again, see Hawkins, *The Informed Vision*, 2002. See also Neil Mercer and Steve Hodgkinson, eds., *Exploratory Talk in School* (London, UK: Sage, 2008).

16. Many see the Common Core as providing new openings for discussion and enactment of progressive aims, such as teaching students to reason autonomously and to consider evidence when formulating understandings.

17. Again, see Mayer, *Classroom Discourse and Democracy*, 2012.

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