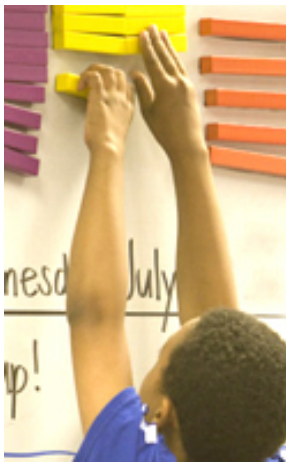**TeachingWorks**
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Generative problems of practice:
Doing the Dialogic Dance

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Generative problems of practice: Doing the Dialogic Dance

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Abstract:

This paper examines generative problems of practice in terms of designing instruction and managing emergent problems of practice in-situ. The paper then articulates principles around the kinds of experiences needed and the breadth of knowledge teachers need to develop in order to address the multiple challenges of learning, especially complex learning in the academic disciplines.

GENERATIVE PROBLEMS OF PRACTICE: DOING THE DIALOGIC DANCE

One of the invitations of addressing diversity in opportunity to learn is its opportunity for us to think broadly about the knowledge base required for generative teaching. I begin with two cases of instruction that present what I think are actually generative problems of practice, regardless of who is the student population. At the same time, instances of generative problems of practice are also culturally situated.

My research has been rooted in what I call the Cultural Modeling Framework (Lee, 1993; Less, 2007). In this framework, we seek to understand how to scaffold new learning in academic domains by recruiting everyday repertoires of practice that youth, especially youth from minoritized communities and communities living in poverty construct their routine life experiences. My work has most directly engaged African American youth. At the same time, I have sought to use this grounding within African American populations as exemplars of a set of broader principles around recruiting diversity as a resource. In Cultural Modeling we identify the demands of rigorous discipline specific problem solving, in our work around literary interpretation, and seek to examine potential relationships between everyday sense-making and canonical disciplinary sense-making. We do this first through a detailed and careful analysis of the demands of disciplinary problem solving and then a careful analysis of the range of everyday repertoires that youth develop by virtue of their repeated experiences in particular cultural communities. From this we develop what we call cultural data sets which are everyday texts or problem sets that students interrogate outside of schooling where the interrogation of such texts or problem sets requires problem solving and epistemological dispositions related to those required in disciplinary reasoning. The two generative cases of problems of practice I present here come from this work. In my research I have sought to position myself inside the research by teaching myself what I am working with other teachers to do. The goal has been to understand the range of on-the-ground challenges that emerge in the complex space of generative teaching. The research studies are rooted in the Cultural Modeling Framework.

The first is the case of a high school senior I call Taquisha. During an episode of examining a cultural data set, I observe that I think Taquisha is not paying attention. In Cultural Modeling, cultural data sets are everyday texts that embody sense-making problems similar to ones students will meet in academic disciplines. The point is to engage students in what we call metacognitive conversations in which they make public what are often tacit reasoning processes they use in the everyday context as preparation for building on these tacit strategies explicitly when they meet the disciplinary texts. This case is from a 12th grade senior literature class where students were being prepared to interpret literary texts in which problems of symbolism were central. The cultural data set is a short 5 minute film called "Sax Cantor Riff" which embodies problems of symbolism. The film is part of a series that was on HBO called *Subway Stories*. My assumption is that the producers at HBO presumed a broad audience would understand the symbolic significance of characters and actions in the film since they had invested a lot of money in producing it for a broad audience. During the film, I observe Taquisha reading the newspaper, which I initially interpret as resistance to my instructional goals. Upon completion of showing the film, I approach Taquisha because of my concern that she was not paying attention. To my surprise, Taquisha posits a question about how several characters that on the surface were unrelated were connected. The question clearly indicates that Taquisha was capable of attending simultaneously to the film and the newspaper at the same time. In that moment, as the teacher, I had to be able to understand what Taquisha's question was an instance of in terms of the problem solving space invited by the film and to be sufficiently adaptive to re-conceptualize in the moment my assumption that her act of reading the newspaper was an act of resistance.

I have argued (Lee, 2005; Lee, 2010) that the knowledge base upon which I drew to make a pedagogical decision in the moment was multi-dimensional. I had a deep understanding of the range of interpretive problems posed by this visual text and how these problems were also instances of literary problem solving. I needed this knowledge base in order to understand what Taquisha's question was an instance of. I also had to depend on my knowledge of adolescent development in order to interrogate what resistance means in the context of adolescent development. I also had to depend on my knowledge of Taquisha as an individual in order to figure out in the moment how to respond. My reading of Taquisha as a person was that if you're

going to pick a fight with her, you better be ready to go to the mat. So instead of critiquing her for reading the newspaper, I engage her in a form of signifying (Smitherman, 2000) – a tradition of ritual insult in African American English speaking communities – by retorting to her question "you saw that question in the *Sun Times*, right." Because Taquisha as a speaker of African American English understood the genre of ritual insult, she did not take my statement as a critique of her by responding "Yeah," taking on a satirical stance (e.g. literally of course she did not see the question in the Chicago newspaper). In this interchange, I drew on my cultural knowledge of the African American speech community allowing me to raise my concerns without positioning Taquisha as rebellious. I also then, because of my content knowledge and pedagogical content knowledge, was able to position Taquisha's question as an instance of a particular interpretive problem that was then made public and available to the rest of the students to interrogate. My argument with this case illustration is that understanding acts of resistance by students is a generative problem of practice and that the knowledge base required to interrogate and respond in the moment is complex, multi-disciplinary, and multi-dimensional.

The second case is from a four-year longitudinal Cultural Modeling intervention in an urban African centered charter high school. The teacher in this case is relatively new to the profession and has developed a culture of inquiry that encourages student inputs into discussion. Students are reading the short story *Damballah* by John Edgar Wideman as part of a larger literature unit on symbolism, using cultural data sets to help students become metacognitive about heuristics and epistemological dispositions they have developed in interrogating everyday texts through their experiences outside of school. Students are socialized to engage what Rabinowitz (1987) calls "Rules of Notice" (e.g. rhetorical moves made by authors to draw the reader's attention) and to wrestle with what Hillocks (Hillocks & Ludlow, 1984) calls questions of author generalization (e.g. themes) and structural generalizations (e.g. language and structure used by authors to convey ideas), both of which require close and critical reading. *Damballah* is a story about an enslaved African who maintains his memory of his African cultural belief systems and practices in the midst of efforts to de-humanize people of African descent. The story is dense with problems of symbolism, of point of view, and of thematic abstractions that include the archetypal theme of coming of age. It is rich in descriptive language and allusion. The teacher initiates a discussion recruiting students to raise questions they have about the story and hypotheses they have about what they think is significant in the story.

The case entails what I have come to call emergent understandings. These are cases where students make propositions that are not fully formed, that may be expressed in everyday rather than academic disciplinary language. The generative challenge for the teacher is – as in the first case – to understand what the students' statements signify in terms of the disciplinary reasoning goals of the lesson or unit. The teacher here had a pre-established set of questions she posed to the students, which were more or less lower level questions about plot, character (e.g. who is Orion), and whether story being told from first or third-person point of view. However, students were posing hypotheses about language and actions that could be symbolic, that could be archetypal; and yet in the moment the teacher did not recognize the import of their statements and basically did not respond or comment but continued on with her line of questioning. We have since – several years later - interviewed this teacher as she observed the video of this class and she recognized the opportunities that she missed in those moments. This case not only represents the problem of practice around understanding the disciplinary import of students' claims that are not yet fully formed, but also a problem of managing classroom discussion – namely that oral discussion is ephemeral. It is fleeting unless there are practices to memorialize claims and reasoning and questions, essentially creating external representations of modes of reasoning that are then available publicly to the class and to the teacher (both in the moment and later with time to reflect).

This issue of the significance and function of external representations in disciplinary reasoning is important yet differs substantively by discipline. While in mathematics and science, the creation and examination of external representations are central to the practice (Schoenfeld, 1985), in disciplines like literature and history (at least as they are typically taught in K-12 education) external representations that are created as students are engaged in sense-making are not the norm. In these disciplines, in the typical K-12 curriculum and pedagogical practices, such representations come after reading texts in the form of essays and written responses to

short answer questions. In this second case, the knowledge base required involves a deep understanding of the range of problems instantiated in the "texts" being examined (I say "texts" because even in mathematics, students are reading problems, even if they are simple algorithms); knowledge of the range of pathways through which students might wrestle with the problem; and the potential relationships among those pathways. And the teacher must know – as did this teacher – how to structure classroom norms that encourage students to initiate ideas, to not be fearful of mistakes, and to listen and respond to one another.

Both of these cases are intended to illustrate the complexity of knowledge required for teaching and to do so in ways that are responsive to and plan for diversity in ways of knowing, in ways of interacting, in ways of using language. Certainly Shulman's (1986, 1987) construct of pedagogical content knowledge is essential here. However, I argue that the cases I offer demand content and pedagogical content knowledge, but equally knowledge of child and adolescent development as issues of perceptions, identity, relationships, and language use play out in diverse communities (Lee, 2017).

I have argued (Lee, 2006) that robust learning environments seek to accomplish the following:

- Assist students in feeling efficacious
- Make problem solving explicit and public through inquiry
- Draw on relevant prior knowledge, experiences, epistemological dispositions, and language repertoires to facilitate deep knowledge construction
- Determine goals for teaching and learning that are not limited to decontextualized technocratic knowledge, but that equally connect to students' current and future possible lives in ways that build deep conceptual disciplinary knowledge (especially in fields like mathematics and science)
- Respond to students' displays of needs for support (physical, social, emotional, cognitive)

These instructional goals suggest that the goals of teaching go beyond technocratic knowledge, although to a large degree the tools we use to evaluate students and schools reinforce the idea that technocratic knowledge is what is foremost. It would be naïve and irresponsible to suggest that technical knowledge in academic disciplines is not important – in part because, for children and adolescents, school is the primary site where they have access to such knowledge. However, the challenge is that factors that contribute substantively to youth's ability and willingness to engage such knowledge include more than the cognitive (Farrington et al., 2012).

Students' perceptions of themselves, the setting, other people and tasks contribute to the emotional salience they attribute to experience (Spencer, 2006). Deep emotional responses – positive or negative – trigger the representation in long term memory of the experience and as a consequence the willingness to engage and persist (Dai & Sternberg, 2004). Emotional attributions of experience are also intimately tied to perceptions about social relationships among actors in the setting. Students' sense of self-efficacy with regard to the tasks of schooling are also intertwined in this nexus of perceptions, cognition, and emotions. Students' perceptions of themselves are also complex because there are multiple dimensions of their identities (in terms of individual personhood and personality, as members of an array of cultural communities – family, ethnic/racial, gendered, national, religious, as well as peer social networks) (Boykin, 1986; Burke, 2003). Nasir and Peele-Eady (2012) pose the question of how social settings, including classrooms and community settings, recruit identity repertoires, make visible how prior knowledge, dispositions, perceptions of the self, and sense of efficacy are taken up and relevant resources. To plan instruction in ways that anticipate what students bring (senses of the self, of self-efficacy, of the tasks, of the people including the teacher) to rigorous content disciplinary goals is no simple matter. How teachers think about these range of repertoires of the 25 to 125 students they may teach each day is clearly no small matter. On the one hand, broad knowledge about child and adolescent development and knowledge about how people learn can provide broad parameters for anticipating regularities. Examples of such regularities include how kindergarten teachers can anticipate that 5 year-olds entering their classroom may display deeply emotional responses because of the dissonance they experience in this new environment; or how middle school and high school teachers can anticipate that relations with peers are going to play

out because of physiological changes occurring in their bodies.   On the other hand, within those regularities, there will be great variation, some based on individual differences, and some based on differences that emerge from youths' membership in more macro-level communities associated with race/ethnicity, class, religion, among others. Teachers' perceptions about what these macro-level cultural communities may signify are complicated by what Steele (2011) calls "stereotypes in the air," which include stereotypes about race, about poverty, about language, about so-called "disability," about gender.

   The question then becomes what is the nature of teacher professional development – pre-service and in-service – required to engage the profession in wrestling with these complexities? I argue that the nature of those professional experiences share much in common for both pre-service and in-service learning:

1. They must have repeated opportunities to wrestle with the problems of the academic discipline. These include the content they will be teaching and the progressions of content knowledge around the grade levels they will teach. And content knowledge includes epistemology, big ideas and concepts, modes of reasoning, ways of using language, and genres and forms of representation (Goldman et al., 2016). These multiple content knowledge goals are complex and must be re-visited each time teachers engage in the design of instructional units. The additional challenge is that the pedagogical implications of this content knowledge are not equally articulated across the academic disciplines. For example, standards in mathematics and science are much more explicit about these multiple dimensions of content knowledge than in fields like history/social studies and literature (National Governors Association, 2010). And a further complication is that particularly with regard to content area reading, the profession has few examples of diagnostic assessments that provide teachers with useful feedback around students' competencies across these multiple dimensions (Goldman & Lee, 2014; Valencia, Wixson, & Pearson, 2014).

2. They need to have available for interrogation cases of generative problems of practice. Such cases need to include video, student work, assessments, and if available, data on students' responses to and perceptions of instruction (e.g. for example with instruments like the TRIPOD) (Ferguson & Danielson, 2015; Kuhfeld, 2017). Such cases need to illustrate diversity in pathways for learning, diversity in resources students bring (e.g. knowledge, dispositions, language, interests, prior knowledge from everyday lived experiences), and diversity in the range of ways that students engage or do not engage.

3. They must have supports while they are engaged in practice. As opposed to professional development supports in other parts of the world, in-situ coaching is not the norm in the U.S.. Teachers in the U.S. spend more time providing direct instruction than teachers in other high achieving nations (Darling-Hammond, 2010). Creating schools as a community of learners for the adults in the building is captured in the practice of Lesson Study in Japan (Lewis, Perry, & Murata, 2006). And when we employ instructional coaches in the U.S. they are more likely to be in elementary schools than high schools, and less likely to be equally trained in child and adolescent development as they are in the particular content areas for which they provide coaching.

4. They must have experiences to interrogate safely their own assumptions (e.g. implicit biases, stereotypes positive or negative, the nature of knowing, what they think about how people learn, their assumptions about ability) (Rudman, Ashmore, & Gary, 2001; Staats, 2016). Interrogating such assumptions can be difficult as such experiences can cause teachers to question long held conceptions about themselves that may be disrupted.

   To integrate these professional learning goals in ways that explicitly address the ways that opportunity to learn is equally structured and institutionalized in this country adds another layer of interrogation. In many ways, attention to culture is repeatedly called out around

inequities in opportunity to learn. On the whole, our attention to culture suffers from simplistic ideas about culture and cultural membership. Gutierrez and Rogoff (2003) refer to this as the box problem, the assumption that cultural communities are homogenous and that people/youth belong to a single cultural community, typically defined by race/ethnicity. And then we either attribute positive or deficit assumptions about such presumed homogenous communities.

　　　Whether positive or deficit attributions are invoked, it is simplistic to think of youth as belonging to singular homogenous and stable cultures. Rather, we all participate in multiple cultural communities, with cultural communities defined as communities with shared practices and belief systems. Among the most powerful cultural communities are those defined by ethnicity, nationality, and religion. This is because these are inter-generational and are sustained across cultural-historical time. I do not place race in this category as race is a political and ideological construct, developed precisely to identify in and out groups and to justify overt actions of oppression (through racist practices and institutional configurations, land seizure, colonialism, enslavement) (Mills, 1997). In human history race is a relatively new construct and because it is most widely associated with dichotomies between those ascribed to be black and those ascribed to be white, many reject race as a cultural attribution for peoples of African descent because being "raced" implies that as a people our history begins with enslavement.

　　　On the one hand, there is work addressing culture as a productive resource (Cole, 1996; Hilliard, 1995; Rogoff, 2003) and on the other hand there are arguments that particular cultural communities embody deficits that schools must overcome (Hernstein & Murray, 1994; Payne, 1999). There is the widely cited study by Hart and Risely (1995) that children from low-income families come to school with deficits in vocabulary and world knowledge. There are books and professional development on what is called the "culture of poverty" (Payne, 1999). There are arguments that children living in poverty lack executive control and problems with socio-emotional development (Heckman, 2012). There are debates about how to think about children who are English language learners and children who speak dialects of English, especially African American English Vernacular (Stotsky, 1999). There is clear evidence that African-American children (especially boys) and Latinx children are subject to significantly greater negative discipline practices (U.S. Government Accountability Office, 2018). Because these meta-narratives, societal stereotypes, unequal access to resources (e.g. per pupil funding, certified teachers, technology, rigorous curriculum in schools; inadequate housing, access to health care, food deserts, lack of green play space, lack of out of school community organization supports for youth in neighborhoods) are so prevalent and dominant, it is particularly important that teachers have routine opportunities to interrogate these structures and societal beliefs; and then to have experiences also with the sources of resilience in stigmatized communities, in particular with regard to the neighborhoods which their schools serve. (Spencer, 2006; Spencer et al., 2006) The Funds of Knowledge Project (González, Andrade, Civil, & Moll, 2001; Gonzalez, Moll, & Amanti, 2004) is a particularly useful example of providing teachers with supports for better understanding both sources of risk and resilience in the communities they serve. And I should add that while the focus of this paper is largely on teachers, it is equally important to note that school leaders need similar learning opportunities both within their school communities, but also as school leaders in broader professional communities.

　　　The question then becomes how do we create environments in which youth thrive and teachers are supported in perpetual engagement with the dynamic demands of robust instruction, with robust defined as addressing in tandem both the cognitive, social and emotional resources that students are coordinating as they engage or do not engage in acts of learning.

　　　I have wrestled with these questions now over some fifty years – from my work as a high school English teacher, to a community college English teacher, to a founder and teacher in African centered high school and elementary schools, to my role over the last 30 years as a researcher. This path has proved I think very useful as I've had to wrestle with different demands of teaching based on the age of my students, with conceptualizing meaningful relations between cultural knowledge and content knowledge across the academic disciplines, and finally with integrating an emerging formal knowledge base around human development that had not been part of my formal academic training. These diverse opportunities situated in practical demands of meeting the needs of students, often students with significant life course challenges due to racism and poverty have widened my horizons. It has led me to think of commercial curriculum as a

resource and not a recipe, to be very wary of quick fix strategies that are pushed in K-12 education (put your objectives on the board; use exit slips; Pair/Share; ask higher order questions; etc.). It's not that these strategies are bad, but rather they require very careful thinking about their functions in relation to one's students and the tasks to be learned.

From these diverse experiences, I initially developed what I call the Cultural Modeling Framework. This framework initially focused on relationships between everyday cultural knowledge and disciplinary knowledge, with an explicit focus on interpreting literature, and with some work on writing narratives (Lee, 1993; Lee, 1995). When I designed interventions, I typically worked with groups of teachers in a high school English department and taught one class myself. My thinking was that I was in a better position to understand the complexities of teaching within the Cultural Modeling Framework if I also taught and that my relationships with the teachers with whom I was working would be more productive and collaborative because I was also teaching. In these studies we typically found positive evidence of student learning through pre-post assessments and were able to document at micro-levels the kinds of interactions that enabled or constrained learning. I documented this work in the book *Culture, Literacy and Learning: Taking Bloom in the Midst of the Whirlwind* (Lee, 2007). I took the phrase "bloom in the midst of the whirlwind" from a poem by Gwendolyn Brooks which I took as a metaphor for our goals, to support the full blossoming of our children, despite the whirlwinds of life they faced. It was in the writing of that book that I learned about a young man I had taught named Yetu (looking back at fieldnotes from one of my collaborators who was the videographer for the project and who herself gathered ethnographic observations of students when they were not in class). I learned that despite the fact that Yetu as a freshman worked wonderfully in my class (I wrote about him in an article called *Is October Brown Chinese*) (Lee, 2001) that by his sophomore year he had become the father of twins and by his junior year had been kicked out of school for selling drugs. I was devastated, not only because of what had happened to Yetu, but also because even though I was in the school during his sophomore and junior year, I did not know what had happened to him. This was an eye opening experience that led me to re-conceptualize the Cultural Modeling Framework more expansively, to think about the short and long term identity work that was required both in and beyond the classroom and to think about the needs of the school as an organization beyond simply what individual teachers did. I re-named the approach as the Multi-Dimensional Cultural Modeling Framework (Lee, 2014). I was then able, with support from the Institute of Education Sciences, as a co-principal investigator in Project READi (https://www.projectreadi.org/) to carry out a four year longitudinal intervention at an urban African centered charter high school serving predominantly African American adolescents who largely lived in poverty. While I did not directly teach in the project, I was physically working in the building generally two to three days a week, working with teachers, administrators and individual students. I offer a brief description of the project as an example of joint attention to the needs of teachers, administrators and students as they engage in complex disciplinary teaching with the goal of supporting the holistic development of adolescents.

THE MULTI-DIMENSIONAL CULTURAL MODELING PROJECT

Based on our goal of placing identity development and self-efficacy at the heart of the work, we worked with teachers in developing curriculum content and pedagogical strategies that we hypothesized would support jointly disciplinary reasoning and argumentation as vehicles for identity wrestling. Because our students were African-American and because the school was African centered, we explicitly focused on supporting the development of a positive sense of racial identity (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). The concept of racial identity is multi-dimensional, including how people perceive themselves in terms of race, how they think others perceive race, and how important race is in their perceptions of themselves. We consciously selected texts that met two criteria: texts across units of instruction embodied a common set of interpretive problems (e.g. symbolism, irony, unreliable narration, etc.) as well as a theme that invited students to interrogate a challenge with which we anticipated they wrestled both because they were adolescents and because they were African-American. We used traditional strategies of Cultural Modeling including cultural data sets (e.g. everyday texts with which students were already able to recognize and make sense of the same interpretive

problems they would meet in the canonical literature texts of the instructional unit) and metacognitive instructional conversations (e.g. explicit and public talk about the reasoning they employed to attribute meaning to the texts); invitations to interact with one another using their everyday language repertoires (in this case use of African-American English rhetorical patterns); support in translating their reasoning processes from everyday language to academic genres of written argumentation. In addition to the work of literary reasoning and identity wrestling in literature classes, literacy supports were also provided for freshmen in what we called seminar classes where students would again explore topics of relevance to them through reading and writing largely expository texts and an African centered focus in their history classes. We also organized whole school structures to support holistic development. These included teachers serving as advisors to students, male and female mentoring programs, and an array of enrichment extra-curricular programs (e.g. dance, yoga, debate, math team) many of which were spearheaded by students and teachers.

In order to evaluate the intervention, we developed close transfer tasks of literary interpretation because there are no existing standardized measures with what we consider ecological validity. We also included in our evaluation students' progress on the district's mandated ACT series for freshman, sophomore and junior/senior students. Because we hypothesized that students' perceptions of both school climate and our Cultural Modeling instructional practices would matter for students' engagement and academic outcomes, we administered the TRIPOD survey (Ferguson & Danielson, 2015) as well as a survey of their use of the instructional practices. Because we were further interested in how their senses of identity, coping and epistemological beliefs – in this case about the functions of reading literature – would matter for students' engagement and academic outcomes, we administered formal surveys of racial identity (Sellers et al., 1998), coping (Carver, 1997), beliefs about ability (Blackwell, Trzesniewski, & Dweck, 2007), and a measure of literary epistemology developed and validated by Project READi (Yukhymenko-Lescroart et al., 2016). Overall, we found positive relationships among how students saw themselves and how well they did on both the close and far transfer assessments.

We also created supports for teachers. The goals for robust teaching I have articulated in this essay require expansive and generative knowledge. As a consequence, we developed on-going professional development during the school year and during the summers. We engaged teachers jointly in curriculum development. We hired instructional coaches for literature, seminar and history instruction. Instructional coaches met with teachers in terms of planning, observations to review and set goals, and to review assessment data. Classes were videotaped and much of the professional development both for individual teachers and teacher groups by discipline included joint interrogation of artifacts of practice including both video and student work.

It is not the case that this intervention was simple and straightforward. It is not the case that we encountered problems that we were not able to ameliorate. It is not the case that the learning of students, teachers, and administrators were linear or always positive. However, overall the data from the study reveal important big ideas: student identity with regard to racial/ethnic identity, ability and coping matter for academic learning; students' perceptions of instruction, of the tasks they are asked to engage matter for engagement and learning; teachers' perceptions of the goals of instruction both in terms of their conceptions of what students need to know and be able to do in the disciplines and of how students learn matter; and conscious and systematic supports for learning of all in the school community matter. Most interventions and commercial curricula focus solely on a set of perceived goals of cognitive development. Programs that attend to socio-emotional development are typically not integrated into instruction in the academic disciplines, but treated as add-ons. Much of the attention to teacher in-service learning separate attention to cognitive goals from attention to goals around identity and socio-emotional learning, and rarely do such programs attend explicitly to issues of race/ethnicity, gender and class.

CONCLUSION

I have tried in this brief essay to articulate a vision of the knowledge base and dispositions that I think are required for generative and robust teaching. And while I have given explicit attention to what such teaching means for students from minoritized communities and

communities living in poverty, I strongly believe the core propositions hold for all children. I think of teaching as I think of parenting, except teaching may be more difficult because as teachers we don't spend as much time within a year or longitudinally across time as do parents. Teaching like parenting, and indeed any efforts to sustain any meaningful long term relationships, require what I think of as *dialogic dancing* – working to develop a shared sense of the dance, while simultaneously learning to read and follow one another's moves, and in what may be the most creative dancing learning how to provide space for the innovation and ingenuity of the other. Such dialogic dancing requires on-going learning because both the partners and dance will change both within and over time. It is precisely this kind of systemic improvisation, rooted in a holistic understanding of the science of learning and development, in tandem with deep knowledge of the discipline(s) taught that makes teaching exciting. And because when such dialogic dancing is powerful, lives are changed in the most consequential way.

REFERENCES

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*(1), 246-263.

Boykin, A. W. (1986). The triple quandry and the schooling of Afro-American children. In U. Neisser (Ed.), *The School Achievement of Minority Children* (pp. 57-92). Hillsdale, NJ: Lawrence Erlbaum.

Burke, P. J. (2003). Relationships among multiple identities. In *Advances in identity theory and research* (pp. 195-214): Springer.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief cope. *International journal of behavioral medicine, 4*(1), 92-100.

Cole, M. (1996). *Cultural psychology, A once and future discipline*. Cambridge, MA: The Belknap Press of Harvard University Press.

Dai, D. Y., & Sternberg, R. (2004). *Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development*. Mahwah, NJ: Lawrence Erlbaum.

Darling-Hammond, L. (2010). *The Flat World and education: How America's commitment to equity will determine our future*. NYC: Teachers College Press.

Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2012). *Teaching adolescents to become learners. The role of noncognitive factors in shaping school performance: A critical literature review*. Chicago, IL: Consortium on Chicago School Research.

Ferguson, R. F., & Danielson, C. (2015). How framework for teaching and tripod 7Cs evidence distinguish key components of effective teaching. *Designing teacher evaluation systems: New guidance from the measures of effective teaching project*, 98-143.

Goldman, S. R., Britt, M. A., Brown, W., Cribb, G., George, M., Greenleaf, C., . . . READI, P. (2016). Disciplinary Literacies and Learning to Read for Understanding: A Conceptual Framework for Disciplinary Literacy. *Educational Psychologist*, 1-28.

Goldman, S. R., & Lee, C. D. (2014). Text complexity: State of the art and the conundrums it raises. *Elementary School Journal, 115*(2), 290-300.

González, N., Andrade, R., Civil, M., & Moll, L. (2001). Bridging funds of distributed knowledge: Creating zones of practices in mathematics. *Journal of Education for Students Placed At Risk, 6*(1-2), 115-132.

Gonzalez, N., Moll, L., & Amanti, C. (Eds.). (2004). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. Mahway, NJ: Lawrence Erlbaum.

Gutierrez, K., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher, 32*(5), 19-25.

Hart, B., & Risley, R. T. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: Paul H. Brookes.

Heckman, J. J. (2012). An effective strategy for promoting social mobility. *Boston Review*, 10155-10162.

Hernstein, R., & Murray, C. (1994). *The bell curve: Intelligence and class structure in American life*: Free Press.

Hilliard, A. G. (1995). *The maroon within us: Selected essays on African American community socialization*. Baltimore, MD: Black Classic Press.

Hillocks, G., & Ludlow, L. (1984). A taxonomy of skills in reading and interpreting fiction. *American Educational Research Journal, 21*(1), 7-24.

Kuhfeld, M. (2017). When students grade their teachers: A validity analysis of the Tripod student survey. *Educational Assessment, 22*(4), 253-274.

Lee, C. D. (1993). *Signifying as a scaffold for literary interpretation: The pedagogical implications of an African American discourse genre*. Urbana, IL: National Council of Teachers of English.

Lee, C. D. (2001). Is October Brown Chinese: A cultural modeling activity system for underachieving students. *American Educational Research Journal, 38*(1), 97-142.

Lee, C. D. (2005). Taking Culture Into Account: Intervention Research Based on Current Views of Cognition & Learning. In J. King (Ed.), *Black Education: A Transformative Research and*

Action Agenda for the New Century (pp. 73-114). Mahway, NJ: Lawrence Erlbaum (joint publication with the American Educational Research Association).

Lee, C. D. (2006). The educability of intellective competence. In E. W. Gordon & B. L. Bridglall (Eds.), *The affirmative development of academic abilities.* (pp. 155-188). Boulder, CO: Rowman and Littlefield Publishers.

Lee, C. D. (2007). *Culture, literacy and learning: Taking bloom in the midst of the whirlwind.* New York: Teachers College Press.

Lee, C. D. (2010). Soaring above the clouds, Delving the ocean's depths: Understanding the ecologies of human learning and the challenge for education science. *Educational Researcher, 39*(9), 643-655.

Lee, C. D. (2014). A multi-dimensional cultural modeling framework for the design of robust literacy instruction. In P. Dunston, S. Fullerton, M. W. Cole, D. Herro, J. Malloy, P. Wilder, & K. Headley (Eds.), *63rd Yearbook of the Literacy Research Association* (pp. 78-85). Altamonte Springs, Florida: Literacy Research Association.

Lee, C. D. (2017). Integrating research on how people learn and learning across settings as a window of opportunity to address inequality in educational processes and outcomes. *Review of Research in Education, 41*(1), 88-111.

Lewis, C., Perry, R., & Murata, A. (2006). How should research contribute to instructional improvement? A case of lesson study. *Educational Researcher, 35*(3), 3-14.

Mills, C. W. (1997). *The racial contract.* Ithaca, NY: Cornell University Press.

Nasir, N. i. S., & Peele-Eady, T. B. (2012). Identity and learning. *Encyclopedia of the Sciences of Learning*, 1482-1484.

National Governors Association. (2010). *Common core state standards initiative*: CCSSO Council of Chief State School Officers.

Nowicki, J. M. (2018). K-12 Education: Discipline Disparities for Black Students, Boys, and Students with Disabilities. Report to Congressional Requesters. GAO-18-258. US Government Accountability Office.

Payne, R. K. (1999). *A framework for understanding and working with students and adults from poverty*: RFT Publishing.

Rabinowitz, P. (1987). *Before reading: Narrative conventions and the politics of interpretation.* Ithaca, NY: Cornell University Press.

Rogoff, B. (2003). *The cultural nature of human development.* NY: Oxford University Press.

Rudman, L. A., Ashmore, R. D., & Gary, M. L. (2001). " Unlearning" automatic biases: the malleability of implicit prejudice and stereotypes. *Journal of Personality and Social Psychology, 81*(5), 856.

Schoenfeld, A. H. (1985). *Mathematical problem solving.* Orlando, FL: Academic Press.

Sellers, R. M., Smith, M. A., Shelton, J. N., Rowley, S. A., & Chavous, T. M. (1998). Multidimensional model of racial identity: A reconceptualization of African American racial identity. *Personality and social psychology review, 2*(1), 18-39.

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*, 1-22.

Smitherman, G. (2000). *Talkin that talk: Language, culture and education in African America.* NY: Routledge.

Spencer, M. B. (2006). Phenomenology and ecological systems theory: Development of diverse groups. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology* (pp. 829-893). New York: Wiley.

Spencer, M. B., Harpalani, V., Cassidy, E., Jacobs, C., Donde, S., & Goss, T. N. (2006). Understanding vulnerability and resilience from a normative development perspective: Implications for racially and ethnically diverse youth. In D. Chicchetti & E. Cohen (Eds.), *Handbook of developmental psychopathology* (Vol. 1). Hoboken, NJ: Wiley.

Staats, C. (2016). Understanding implicit bias: What educators should know. *American Educator, 39*(4), 29.

Steele, C. M. (2011). *Whistling Vivaldi: And other clues to how stereotypes affect us (issues of our time)*: WW Norton & Company.

Stotsky, S. (1999). *Losing our language: How multicultural classroom instruction is undermining our children's ability to read, write, and reason*. NY: Free Press.

Valencia, S. W., Wixson, K., & Pearson, P. D. (2014). Putting text complexity in context: Refocusing on comprehension of complex text. *Elementary School Journal, 115*(2), 270-289.

Yukhymenko-Lescroart, M. A., Briner, S. W., Magliano, J. P., Lawless, K., Burkett, C., McCarthy, K. S., Lee, C.D., & Goldman, S. R. (2016). Development and initial validation of the Literature Epistemic Cognition Scale (LECS). *Learning and Individual Differences, 51*, 242-248.