Complexities of Teaching and Implications for Equity

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by Carol D. Lee
Northwestern University

The challenges to opportunity to learn as evidenced by differential life course outcomes associated with race/ethnicity, class, immigrant status, and gender can be found within virtually all nations. In addition, there are huge differences in opportunity to learn and life course outcomes between rich and poor nations. At the same time, we have strong evidence that there are nations and within nations there are institutions where such demographic markers are associated with excellence in educational outcomes. Unfortunately, despite being among the richest nations in the world, the U.S. has unacceptable disparities in educational outcomes predicted by race/ethnicity and class. Linda Darling Hammond in both her most recent book <u>The Flat World and Education</u> and her provocation paper for this conference documents convincingly conditions that contribute to high achieving educational systems: ecological supports for youth and families (e.g. universal access to quality health care, adequate housing, child care for working parents, early childhood education, high academic standards that address conceptual learning aligned with rigorous curriculum and authentic assessments, equitable funding across schools, and systematic, long-term supports for teacher learning). There are many challenges to developing and implementing these conditions that differ across nations. In the U.S., a decentralized system of education complicates decision-making processes. This decentralized decision making is further confounded by the legacy of racism that has permeated U.S. history. Some have further argued that U.S. policy debates around the scope of social supports in areas such as health care, financial supports for those in need, and education are influenced by long term folk beliefs about the power of the

individual to pull one's self up by one's own bootstraps, beliefs that an over-reliance on publicly provided social supports will detract from personal motivation. Others have argued that differences in broad cultural belief systems about innate intelligence versus effort, or individualist versus inter-dependent orientations to relationships and conceptions of the self contribute to motivations to learn, and as a consequence the kinds of ecological and institutional supports that are most easily taken up within societies. I make these points because it is important that we understand the historical, political, economic, and cultural conditions that help to shape how different nations take up the broad conditions that characterize a number of successful educational systems. While we can extrapolate these comparable conditions, there are still substantive differences in the political processes that enable them and in the institutional structures that embody these generative conditions.

Besides these structural and institutional complexities that contribute to equitable opportunities to learn, of equal importance is the question of what teachers need to know and how teachers learn across their careers. A detailed attention to teacher knowledge and learning is essential to conceptualizing the specific structural conditions that can enable professional growth responsive to differences in local conditions (e.g. cultural differences among communities, national resources available to support education [e.g. differences between more and less wealthier nations] and differences in the structure and epistemologies of the academic disciplines being taught. I hope this paper provides a complement to the other papers submitted for the conference by providing an in-depth look at what is entailed in the practice of teaching. This conference provides a forum for exchange regarding similarities and differences between the U.S. and Canada. Both countries wrestle with racial, ethnic and class differences across student populations, but take different approaches, particularly with regard to linguistic variation and social supports for families. Because this is a cross-national forum, I want to situate my discussion of teacher knowledge and teacher learning along two dimensions: (1) what

are foundational principles that should guide instruction despite differences in local contexts and (2) in what ways are these foundational principles shaped by local conditions?

My comments are based on an examination of several bodies of research (how people learn, identity development, motivation, life course development, cognitive and social neuroscience, and expert knowledge in the academic disciplines), my own research in the design of instruction that is both subject matter specific and culturally responsive in what I call Cultural Modeling, my personal experiences as a classroom teacher at the primary, high school, and community college levels spanning over 20 years, and my 40 years of experience in the development of elementary and high schools. I believe that the integration of examining both theory and practice is central to understanding the demands of teaching.

Teacher knowledge involves a complex network of inter-related domains. These include: cognition, or how people learn, including how people learn the subject matters; a specialized knowledge of how people learn particular content and modes of reasoning at different age spans (i.e. what makes learning particular kinds of knowledge easy or difficult for a primary level student versus a high school student); social and emotional development across the life course; motivation; language acquisition and socialization; curriculum design and assessment; classroom management. These bodies of knowledge do not operate as separate and distinct, but rather as an integrated nexus of something we might call teacher knowledge. In some ways one might think of this as what Shulman calls pedagogical content knowledge, but I believe it goes beyond Shulman's conceptualization which focused largely on the teaching of content knowledge, but did not include the social and emotional dimensions of learning, nor how issues of life course development come into play. I have proposed the idea of understanding learning as an outgrowth of a dynamic psychological system in which thinking and feeling are intertwined, in which perceptions of people, tasks, and settings influence goals and effort, and where prior

knowledge provides a foundation for new learning. This idea of learning as an outgrowth of a dynamic psychological system is sufficiently complex as to challenge basic researchers of learning, but teachers must fundamentally have some understanding of such a dynamic system in order to design instruction on the ground that is responsive to the often unpredictable variance in the needs and responses of students to the learning environments designed by teachers. One central question then is how do teachers learn both the discrete bodies of knowledge I have identified, as well as learn how to integrate them in the problems of learning that actual teaching demands. The variance in students' responses to designed environments for learning involve both individual differences as well as differences made possible by students' participation in different cultural communities of practice (e.g. defined by inter-generationally inherited cultural practices associated with nationality and ethnicity, or cohort culture [e.g. youth culture], or communities of practice defined by hobbies and interests [e.g. video games, sports, music, etc.]). This complex nexus of knowledge is further complicated by both the requirements of advanced planning of instruction, but also the ability to make inferences on the spot on the performance floors of classrooms about the meaning of students' responses to learning (e.g. what their modes of reasoning and representations of understanding in the moment reveal; what underlies their displays of resistance). I will illustrate this integration of knowledge on the performance floor of classroom instruction.

Cultural Modeling is a framework I have developed providing principles for the design of instruction that builds on intuitive knowledge youth, particular minority youth, construct from everyday experiences to scaffold subject matter specific learning. My empirical work in this arena has focused on the domain of response to literature. The underlying logic of Cultural Modeling addresses the cognitive demands of subject matter learning, the role of culturally rooted prior knowledge, and motivational principles around instructional practices that position students as competent and that privilege a deep understanding of disciplines. Cultural Modeling involves the use of what I call cultural data sets. These

are texts from everyday experience that require modes of reasoning analogous to that of problem solving in the discipline being taught. In the following example, we have developed a unit on symbolism in literature for 12th grade students using Toni Morrison's novel Beloved as the anchoring work. Instruction takes place in an African American high school serving a predominantly low-income population, with a long history of underachievement. The cultural data sets include rap lyrics as well as a 3 minute film called "Sax Cantor Riff" which originally appeared as part of a television series on HBO called Subway Stories, directed by renown African American filmmaker Julie Dash (who directed Daughters of the Dust. The film is replete with symbols. The assumption is that the students have an intuitive understanding of the symbols in the film as it appears on a popular television series, and because the prior knowledge required to interpret the symbols is available from cultural scripts from the students' everyday lives. While showing the film, Taquisha is reading from the Sun Times newspaper. I am the teacher in the following exchange.

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(1) T: Other questions. Other questions. Taquisha you have a question inside that paper there?

(2) Taquisha: Yup.

(3) T: What's your question?

(4) Taquisha: I put what does the [film have to do with anything we're studying?]

(5) T: Well that might be a question for me.

(6) Taquisha: Well what does the book have to do with the girl and the man singing?

(7) Taquisha: What does the -------- (Inaudible) ? (Students were all talking at the same time.)

(9) T: What does the girl have to do with what?

(10) Taquisha: What does the girl have to do with the girl and the man singing? (The

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> **teacher is writing the questions down on the board.)**
>
> **(11) T**: What is the girl singing is her question have to do with the man singing. That is a beautiful and sound question. Found it in the Sun-Times to didn't you?
>
> **(12) Taquisha:** Yup.
>
> From Carol D. Lee (2007) <u>Culture, Literacy and Learning: Taking Bloom in the Midst of the Whirlwind</u>

I have argued that in this exchange, I as the teacher am confronting a classic problem of teaching, that of understanding student resistance. Our culturally focused and cognitively guided instructional plan has not anticipated that students will resist attending to cultural data sets. However, it appears on the surface that Taquisha is not paying attention to the film, but rather is reading the newspaper. I argue that I am drawing on multiple domains of knowledge in interpreting and responding in the moment to Taquisha's actions. My knowledge of adolescent development helps me understand that Taquisha's resistance is not untypical of adolescents and therefore I should not take it personally. My unique understanding of Taquisha's personality suggests that it would not be wise for me to address her resistance directly as that will likely only intensify her resistance. My knowledge of cultural resources within the African American English speech community suggests that I can use Taquisha's knowledge of signifying (a genre of talk involving ritual insult) to push her without inviting attack, but the push and pull in signifying is about verbal play, not truth. My knowledge of canonical problems in the interpretation of literature helps me understand her observations of the film as instances of a set of big ideas that will be useful as students move to the novel <u>Beloved</u>, but which Taquisha represents as a localized response to particular details in the film. Specifically, Taquisha has noted parallel actions of disparate characters and assumed there must be a coherent explanation of their relationship, even

though the meaning of the parallels is not made explicit in any way in the film. My decision in the

moment to engage Taquisha in a game of signifying (e.g. "Taquisha you have a question inside that paper

there? ") allows me to challenge her act of resistance in a way that invites verbal playfulness, but is not

personally attacking. She understands the cultural volley (e.g. her response in line 2 "Yup!"). I am

surprised in the moment that she has actually been attending the film. These bodies of knowledge

drawn upon in the moment of practice do not operate here as separate and discrete, but rather are

integrated - if you will – on the fly. The problems presented in the scenario – understanding sources of

vulnerability, understanding disciplinary representations that are not fully developed, invoking cultural

scripts as resources for supporting student learning – are indeed common to teaching. Certainly there is

foundational knowledge in each of the relevant domains upon which I have drawn. At the same time, the

application of that knowledge is not only integrated, but dynamically responsive to the cultural contexts

of this example (a class of speakers of African American English Vernacular, a class, including Taquisha,

of students with histories of low academic achievement, an African American female adolescent as a

senior in high school on the precipice of adulthood, a young woman with a very aggressive personality).

How does such knowledge develop over time? What foundational principles inform this kind of teacher

thinking? How does one learn to adapt such foundational knowledge to the demands of specific teaching

environments? How the systems supporting education conceptualize these questions have direct impact

on the quality of opportunity to learn available to youth who face the greatest systemic vulnerabilities in

particular societies.

Foundational Principles

Effective learning environments are organized to address the following:

- Position the learner as competent

- Anticipate what in the learning tasks may position the learner as vulnerable

- Anticipate what in the learner's experiences (i.e. history of schooling, life outside of school, perceptions of ability, of tasks, of settings, or people) may pose vulnerabilities for the student

- Anticipate and plan for the range of resources that learners bring to instruction (e.g., experience with analogous problems; epistemological beliefs and dispositions – such as speakers of African American English appreciation of language play as a disposition highly relevant to literary interpretation; specialized interests)

- Build trusting relationships

- Make problem solving explicit

- Make public the social good of the problem solving tasks

- Provide supports and feedback as learners are engaged in problem solving

- Create multiple pathways through which learning can take place

- Build informative representations of learner's understandings, including both intermediary and developing representations as well as formal disciplinary representations (e.g. in the Algebra Project the process of moving from pictoral representations of algebraic reasoning to formal equations)

There are a number of interesting examples of creating multiple pathways through which learning can take place. When LiPing Ma asked U.S. and Chinese middle school teachers to solve a problem involving the division of fractions with unlike denominators, most of the U.S. and all of the Chinese teachers could perform the procedure. However, when she asked why you change the operator from division to multiplication and why you invert the numerator and denominator of the 2nd fraction, not one U.S. teacher could explain why. Each Chinese teacher had multiple mathematical explanations. Ma characterizes the Chinese teachers' understanding as knowledge packets of topics and conceptual

understanding of related procedures. This kind of deep conceptual knowledge allowed the Chinese teachers she studied to understand and provide supports for multiple solution paths to mathematical problems. In a similar vein, Magdalene Lampert illustrates in her book <u>Teaching Problems and Problems of Teaching</u> a pedagogy she and Deborah Ball developed of designing a mathematical problem of the day that invites multiple pathways for solution. These multiple pathways they argue provide students with opportunities in groups to explore a wider range of mathematics than the more traditional pedagogy in U.S. classrooms where a correct response involves a singular algorithm.

There are many reasons why students from ethnic and racial minorities and from low-income communities often do not have teachers who can incorporate these foundational principles in the design of instruction and in the enactment of such designs. First, in countries such as the U.S. where the differences in academic outcomes between the poor and the middle class, between minority and majority populations are pronounced, such students are less likely to have teachers with such knowledge. Second, there are often underlying societal belief systems about students who are different from the majority or who are from economically distressed families that infiltrate perceptions of teachers and institutions as well as potentially perceptions that students have of themselves as learners. Societal stereotypes about race/ethnicity, class and about ability create complex challenges that youth from stigmatized groups must learn to wrestle as part of their life course development. The potential impact of stereotype threat is a well established phenomenon (e.g. the belief that one will be judged by some external stereotype in terms of some performance task on which evaluation is high stakes, with the consequence of lower achievement because psychological energy is diverted to responding to the perception of stereotype evaluation). However, the implications of stereotype threat are nuanced and not straightforward. Older children are more likely to be impacted than younger children, and positive socialization can mediate negative construals of ability with regard to race/ethnicity and gender. Such

positive socialization can include proactive racial socialization for youth from racial and ethnic minority groups who face societal stigmatization, positive socialization with regard to the efficacy of effort as opposed to simple constructions of ability by teachers and parents, as well as a persistent experience of academic success (thus the foundational principle of positioning students as competent, of providing supports while students are engaged in problem solving, making problem solving public and explicit, and making public and explicit the social good of particular academic work). In light of negative societal stereotypes and inequities often in the distribution of social and economic supports, these foundational principles for effective learning environments are all the more crucial for equity in opportunity to learn. Most fundamental here is how teachers learn to teach in this way across their professional careers and how they learn to adapt these principles to the variations in local contexts.

Learning to Adapt Foundational Principles to Local Contexts of Teaching and Learning

I return to my argument that teaching entails the integration of a number of bodies of knowledge and the ability to formalize that integrated knowledge in the design of effective learning environments, but equally important to adapt such design principles to the unpredictability of performances in real time classrooms. While I know many do not agree, there are other professions that require the integration of knowledge across disciplines and dynamic adaptation in the contexts of real world practice. Medicine is certainly one such example. Learning to become a doctor requires explicit training in a number of domains, where such learning typically happens in medical school. The long-term internship required of doctors, from the basic internships for generalists to the differentiated internships for specialists involve guided practice with direct feedback from experts. The adoption of such a model for those learning to teach requires both a transformation of pre-service education as well as the organization of schools as sites for learning inside practice. Several of the papers presented at this conference offer compelling examples of pre-service teacher education that involve an integration of

theory and practice across the years of pre-service training. In the U.S. programs like Bank Street College in New York City have a long history of such training. I am particularly interested in what such learning looks like once teachers are working full time in schools.

It is quite possible that learning basic theories of human development, of motivation, of language socialization, of the role of prior knowledge and perceptions in cognition can steep students in exemplars of how processes of learning, maturation and identity development can differ across cultural communities, while still being able to discern broad patterns that characterize our functioning as human beings. Such an orientation to learning basic theories in these domains in pre-service education can go a long way in helping those who are studying to become teachers grow with a dual focus on patterns of regularity and patterns of variation in human learning and development. Then if pre-service students have multiple internships across their four years of college (or a series of fewer but more intense internships for students in master's degree certification programs) that involve practice sites with different kinds of diversity, they can enter the profession at least with a better orientation to diversity in learning. We also need to do much more in developing teaching cases that pose dilemmas of teaching that require the kind of integration of knowledge I have described to be applied to teaching problems involving diversity, particularly with regard to subject matter learning.

Such teaching cases if developed systemically and systematically can be available as well for learning inside practice. They can serve as powerful socializing resources. In addition, if schools can become sites where teachers construct their own cases responsive to their local circumstances, this will go a long way to create schools as learning communities. However, for such a model to work – as is the case with Lesson Study in Japan – each school must have a cohort of master teachers who are steeped in research methods, domain knowledge in the areas I have described, and who have records of designing effective learning environments embodying the foundational principles I have described. In Chicago

where I live, it is interesting that the public hospital is one of the finest providers of emergency care in the city. Unfortunately, we do not have comparable expertise in the schools located in the most challenging neighborhoods.

Conclusion

Teaching is among the most important professions in any nation. Teachers socialize the next generation of citizens. Public education is the one institution in a democracy that we can assure will teach civic engagement and democratic thinking. School is the site where youth learn the skills and intellective dispositions that prepare them for the workforce and hopefully life long habits of reading and thinking deeply. Equity in opportunity to learn these skills and dispositions – civic, democratic, intellective – should be the legacy we provide for all youth. There are clear structural resources that are needed to build and sustain excellent schools for all. But at the heart of the enterprise are the science and art of great teaching. I have attempted in this paper to begin to articulate the nature and scope of knowledge that undergirds great teaching that is responsive to the breadth of variation that characterizes what it means to be human.