

TRANSCRIPT

Common Core State Standards: Implications for Teaching

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EVENT TITLE Collaborating for Success: Implementing the Common Core State Standards in California

EVENT DATE 08/14/12

NATASHA HOEHN And so perhaps there is no one better positioned to inspire us to learn from each other than our first speaker this morning. In 2006, she was named one of the 10 most influential people affecting education policy over the last decade by the National Commission on Teaching and America's Future, and I would assess that her influence has only grown since. Former president of the American Education Research Association and member of the National Academy of Education. Her research, teaching, and policy work has focused on issues of school design, teacher quality, and educational equity. We are thrilled to have her open today with her thoughts on the implications of Common Core, the opportunities of teaching and learning for the future of our communities. So please help me welcome the Charles E. Ducommun Professor of Education at Stanford University, Linda Darling-Hammond.

LINDA DARLING-HAMMOND It is a pleasure to be here this morning and to help you think about how to kick off your school years with this really in many ways both exciting and daunting new set of opportunities that are posed by the Common Core and all of the changes that will occur in both curriculum and instruction and assessments as a function of that. We have some of the leading lights in the state here and in the Common Core development process. So you have an extraordinary set of riches to draw upon today. And I decided to frame my remarks around this concept that Catherine actually introduced in her remarks earlier of deeper learning, and what the role of the Common Core Standards is in supporting what I am going to talk about as a deeper approach to learning that allows for greater transfer and capacity to deal with the information needs of the 21st century.

The goal of the Common Core Standards when they first were announced was to create standards that were internationally comparable, that would, in fact, be on a par with what the high-achieving nations of the world have done in conceptualizing curriculum. That meant, first of all, that they needed to be fewer, with more focus on core concepts in a sequential order over time, rather than, as we have come to call it, "a mile wide and inch deep." Higher,

that is to say, having greater expectations for the learning that students would acquire, and deeper—and I am going to talk a little about what I mean about that last term. But it has to do with the fact that in order to really be able to use knowledge, you have to understand it deeply, you have to know how it connects to other knowledge, you have to have the capacity to transfer it to new situations.

The contrast for deeper is probably expressed by that great cognitive scientist Father Guido Sarducci, who at one point described the Five-Minute University, and the Five-Minute University will teach you in five minutes everything you will remember from your education 10 years later. And it's built on the principle of learning that, in fact, things that you learn out of context without application rarely are usable for you later; they become what's called “inert knowledge” rather than usable, transferable knowledge. And so this notion of deeper learning is very much on the table in all of the countries that are engaged in education reform around the world, and it's one that is really at the core of the Common Core Standards.

So what do I mean—I'm going to give you example of the path to deeper learning. And I am an old English teacher, so I like to use examples from English classrooms and I hear from teachers around the country about their students' work. So this is a little path that will illustrate for you the difference between shallow learning and what happens as students engage in deeper learning. And the concept here that we are trying to teach is *metaphor*.

Okay, here is an example of shallow learning. He was as tall as a 6'3" tree. So that's an early attempt, and it has an *as* in it, but it's not really a deep understanding of the concept of metaphor. We are getting a little deeper here: John and Mary had never met; they were like two hummingbirds who also had never met. But still, the true understanding is not quite there. Another attempt: She walked into my office like a centipede with 98 missing legs. But now we are beginning to see the next one as an example of truly understanding this concept of metaphor, and this is a New York student: He fell for her like his heart was a mob informant and she was the East River.

Now this is what we mean by deeper learning. Another example of going further: Even in his last years, Grandpappy had a mind like a steel trap, only one that had been left out so long it had rusted shut. And this is a kind of learning that could be characterized as deeper but also smart alec: He was as lame as a duck, not the metaphorical lame duck either, but a real duck that was actually lame. Another example of really understanding the concept: She grew on him like she was a colony of *E. coli* and he was room-temperature Canadian beef. Now we go on to understanding the concept and adding irony: The plan was simple like my brother-in-law Phil, but unlike Phil this plan just might work. And finally, I think sort of a *pièce de résistance*: Her vocabulary was as bad as, like, whatever.

So deeper learning means that you really understand the meaning and the purpose of an idea or a concept, and you are able to apply it. And it's, in many ways, the kind of learning that over many years schools have tended to think of as what you reserve for gifted and talented programs and Advanced Placement and honors programs and so on. When my kids were in school, and we'd go to those back-to-school nights, they'd say, "In this program, we really teach your kids to think." And I always wanted to ask the question, "Well, what do you do in the other programs?" But this idea that it's a deep understanding and application.

And the reason for this approach is I think well expressed by a study that was done by some very creative and thoughtful people over at Cal Berkeley. Now if you know anything about this area and this state, you know that Stanford professors don't typically like to quote people from Cal Berkeley. But every once in a while, they do something that is so noteworthy that it has to be mentioned. And this particular study has been over many years tracking the growth of knowledge in the world, and they discovered that between 1999 and 2003, in that four-year period, there was more new knowledge created in the world than in the entire history of the world preceding. At that time, technology knowledge was doubling every two years; it is now doubling every year.

So what's the implication of that for curriculum and for teaching and for instruction? We used to think that you could take all the things that a kid would need to know, line them up, divide them into the 12 years of schooling, hand them out and at the end of 12 years, you would be done; you would know what you need to know for your life. It's clearly not true any longer that you can learn what you are going to need to use in your work, with knowledge moving and growing at such a rapid clip, by simply remembering things that you were taught.

What you need to be able to do is learn to learn; you need to be able to take ideas, understand core ideas and concepts well, have extraordinary capacity to assemble new information, analyze and synthesize that information, evaluate the credibility and utility of that information, put it together, and learn to learn. So facts and concepts don't disappear as being useful, but they have to be carefully chosen to represent the things that matter most in building a schema of a field of work, and they have to be taught in a way that enables students to continue to learn for themselves and build their own new knowledge continually around the knowledge that school helps them to acquire.

So it really changes the way we think about curriculum; it really changes the way we need to think about teaching and learning. And it is the reason at base, it is the core reason for the Common Core Standards is this fact that the way in which we have to think about knowledge and use knowledge is understood in a different way. So deeper learning is an understanding. The meaning and the relevance of ideas is an ability to apply concepts and modes

of inquiry to complex real-world tests. It's a capacity to transfer knowledge and skills to new situations, to build on them and to use them to communicate ideas and collaborate in problem solving and an ongoing ability to learn to learn. In Finland, the central idea that is the theme throughout their national curriculum is the ability to learn to learn, the ability to engage in independent learning in ways that you can carry on beyond.

What are some of the key aspects of the Common Core State Standards? Many of you are already working on this. You know this, that in the area of English language arts, the notion of reading increasingly complex text very closely, being able to communicate effectively in multiple media and across content areas—in fact, they are multidisciplinary; they talk about literacy as it is applied in science and social studies and history and other areas. The use of evidence, the idea that your analyses, your interpretations should be grounded in evidence, should be justifiable, should be defensible, not just pulled out of the thin air. And this idea of engaging in inquiry and in research.

In mathematics, the content is displayed as it is in English language arts along the learning progression, so that there is some sense of how over time students will move along their progression. And along that progression of content acquisition, there is the notion of engaging in mathematical practices. And Phil Daro is sitting right over here, and I know he will say much more about that. So I won't take too much time on that. But the ability to problem solve, to model, to communicate, to reason, to understand how to engage in thinking and communication precisely and to use mathematical reasoning, and then again, using those skills across the content areas and the contexts.

So while these are Common Core State Standards that are brought to us in two content areas, they have implications for all the content areas because they are framed in an interdisciplinary, a multidisciplinary way, for the use of that knowledge. I want to say a word about the progressions. Although they will come to you packaged grade by grade, grade-level standards, the learning progressions need to be understood as the thing that teachers will teach around. And if you are teaching sixth grade, you will have students who are along a learning progression in your classroom quite likely, who are anywhere from perhaps first- or second-grade level in the mastery of concepts that they bring to the classroom and some that are in what might be called by the standard seventh- or eighth-grade level.

So the teacher will have the job not only of getting the third-grade standards that guide their instruction and guide what they understand about what students are expected to appreciate and understand to be able to use in that grade, but they also need to understand the learning progression that allows them to evaluate where kids are along the continuum and teach them where they are with the goal of getting them to where they need to be. So there's two dimensions here that are going to be critically important if instruction is

going to be effective and moving kids to college and career-ready standards, which is the end goal. It's not just teach the third grade or the fourth grade or the fifth grade. A curriculum is also ensuring that kids move along that continuum of learning.

The idea of measuring college and career readiness is fundamentally captured by the realization that students are not entering a multiple-choice world. The assessments—I am not asked to talk a lot about the assessments today, but I will say a word about the assessments. California is part of the Smarter Balanced Assessment Consortium; it's a consortium that I have done some work with, as many other of my colleagues and yours across the state. The assessments will be more open ended; they will be computer based and computer adaptive, which means that a student's response will guide the next questions that they see so that we can more precisely understand where kids are along that learning progression.

Even when kids are sitting down taking a test, which is part of the assessment, they will see many more constructed response answers. They will need to write and engage in manipulation of information in giving answers to a greater degree than has been the case in most states, including California's tests in the past. They will be asked for more applications of knowledge rather than just remembering or identifying the facts. And they will have opportunities to demonstrate more extended learning and performance tasks that are two-day tasks that pose a meaty problem for students that takes them through multiple stages of thinking and responding. And that may mean in English language arts that they will research something; they will write about the information that they have looked at and found and evaluated; they may need to revise their work. In mathematics, they will take up tasks that require them to apply their learning to a situation, they may have to model the answer to a problem.

So again, this requires this kind of transferable knowledge and well-developed thinking, problem-solving, design, and communication skills. So what kind of schools can create these abilities? Of course, when we talk about instruction, we are not just talking about what teachers do but how schools organize the work of teachers. And so clearly, what we are aiming for moves us from schools where kids are working in isolation at rows of desks to schools where kids are working on inquiry and the pursuit of answers to complex problems in ways that require them to collaborate more.

I am going to give a few examples now of some of the kinds of things that are in the Common Core Standards and how countries in other parts of the world teach around these skills that now find themselves in our standards and that have been in the standards of other countries for a while. So the action words that are in the Common Core Standards in math, students should be able not just to recognize or recall or calculate but to understand, describe, explain, justify, prove, derive, assess, illustrate, analyze. They also need to be able to

model, construct, compare, investigate, build, interpret, estimate, summarize, represent, evaluate, extend, and apply. And they should be able to do that to a wide range of both mathematical, sort of pure mathematical problems and real-world problems, and those include uses in science, engineering, and technology.

Here is an older CST math item, which is a way that we represented knowledge in mathematics in the past. There is set of equations. John is asked to identify which property of real numbers did—the student is asked to identify the property of real numbers that John used for step 2. So we are teaching kids to understand or memorize the names of properties and procedures and to calculate and apply them.

Here is sort of an example of the difference in how we might think about the instruction. This particular teaching and assessment test comes from Queensland, Australia, and it has in it all of the things that the—I shouldn't say all—many of the features of learning that are expressed in the Common Core Standards in mathematics. And in this particular instructional task, the students are asked to figure out how to find a practical storage area for stackable chairs. They engage in modeling. They have to develop mathematical models for dimensions of stacks of chairs, where the number of chairs is unknown. They have to figure out, practically speaking, how to store the chairs and use the models to figure out how many chairs they can put in a stack and how many they can fit in different volumes of space. They have to work in a group to do this, and they use a research journal to investigate—again, this is one of the words that was in the standards—which guides them and their group through their ideas, their questions, their plans, what they calculated, what data they collected, and how they went about solving the problem. And then they have to explain and evaluate. They have to write a report that provides an overview of the scenario and the questions, the solutions to the questions using mathematical language data calculations, a conclusion, and then they should be able to explain how they solved the problem.

So that's a form of mathematics in which you have justifying, modeling, explaining, interpreting, calculating, and so on. So the kind of instruction that we are talking about to actually implement the standards is a form of instruction that engages students in these kinds of applications of the mathematical knowledge that they are learning.

In the Common Core Standards in English language arts, you have some extensive emphasis on writing, much more emphasis on writing than we have had in the past: produce clear and coherent writing in which the development, organization, and style are appropriate to the task, purpose, and audience. So it's writing with a set of purposes. Also, this idea of developing and strengthening writing by planning, revising, editing, rewriting, trying a new approach, focusing on what is most significant for a particular purpose or

audience. So it's not just writing—let's get a few paragraphs out and turn it in, which actually our current writing assessments do. It's here is a question. It's actually usually not attached to—it's not always attached to a text.

In the Common Core Standards, writing tests will be attached more and more to text because you are using evidence to inform your judgment and this expectation of the full and complete writing process. And the standards call for writing in many different domains. And just to give you an example of how, for example, in the high school in the United Kingdom, there is an expectation for the kind of writing that's done in the course of a single school year that is around multiple genres of writing. So all of the kids who go to high school in the United Kingdom have to do three different writing tasks over the course of this year—this is actually also scored as part of the assessment, but it's part of the teaching process—that require reading literacy, literary texts and comparing them and interpreting them. They do imaginative writing, speaking and listening of several kinds, and then informational and idea writing.

So you can imagine a curriculum in an English language arts classroom where the expectations for the amount of writing and the genres of writing are much more laid out if you are teaching to the Common Core State Standards because of the expectations in the standards and more clearly defined and varied by genre in response to the standards than may be the case today. There are many classrooms that I know of today where kids do very little writing at all and very few places where you will expect to see that there will be x number of pieces of writing of particular genres in particular grade levels that are responsive to the demands of the standards. Writing, by the way—and I am now going into my old English teacher mode—writing is like basketball; you have to dribble every day if you want to get at it, and you have to write every day if you want to get good at it. And it doesn't all have to be marked with feedback in order for kids to get the practice, but it has to be continuous, and that's really a theme across the Common Core Standards.

In reading, drawing evidence from literary or informational text to support analysis, reflection, and research is a theme, different from what we have used as a way to evaluate close reading before. This is from one of our older released items from our CST ELA, which asks, “Which of the following statements from the passage supports the author’s conclusion that carrier pigeons sometimes had a dangerous job?” So this is really a close reading item, and basically you end up realizing that if the pigeon got wounded, it must have been a dangerous job.

I am going to show you the kind of close reading that the Common Core Standards have in mind. This is from a task that builds on the kind of instruction that's used in English language arts in Alberta, Canada—a reading task that's embedded in science content. You may see this on the new assessments, that English language arts tasks will be embedded in history

content and science content. This is an authentic text. Common Core Standards encourage us to use authentic texts for students. It's from *Scientific American*. You don't have to read it. If you are trying to read it, you get bonus points, but you don't have to do that. It's actually a *Scientific American* article about how autism may be related to thalidomide, the taking of thalidomide, by women, and it gives a lot of the information about that. It has a visual graphic representation of the kinds of effects on embryonic development of taking thalidomide at different weeks in a pregnancy. That's also drawn from the expectations of Common Core Standards. There is an expectation that in reading, you will be able to interpret graphs and charts and other modalities of the communication of information beyond words. So this would be something you would expect to be helping kids to understand that literacy is about multiple literacies, or multiple forms of literacy.

And at the end of it, in this particular assessment, they then ask from that deep reading, questions like "Identify two areas of the brain that can be affected in an individual with autism," "Explain the relationship between the areas of the brain and the symptoms of autism," etcetera. So a very different kind of deep reading than going into a passage and simply pulling out one phrase or fact and seeing if you can locate it as opposed to deeply understanding it.

Also in the Common Core Standards in English language arts are tasks like the following. Conduct short and sustained research projects to answer a question, solve a problem, synthesize multiple sources on the subject demonstrating an understanding of the subject under investigation. So we will expect more instruction that is inquiry oriented and research focused. Present information, findings, and supporting evidence so listeners can follow the line of reasoning. That means that some of that presentation is spoken. And use technology, including the Internet, to publish and produce and update writing products. Make strategic use of digital media, textual, graphical, audio, visual, and interactive elements.

So this gets closer and closer to what people really do in 21st century jobs in the real world in regard to the ways in which literacy is understood, the way in which it's learned, the way in which it is used. And just to give you an example of another instructional task, this is also from England. It's a task which gives kids the expectation that they are going to be working for a promotions firm that handles rock bands, and you have to figure out how to be sure that you are able to take in enough money that covers the expenses and the processes of mounting these concerts. And kids basically have to develop a software solution, try it out with real users, describe how it works and revise it, and then present it. And so it's that kind of way of teaching around a cluster of skills.

The other thing that I would point out is that one can't teach to the Common Core State Standards one standard at a time. Like today we are doing 3.2, and

tomorrow we are going to do 3.3. There will be some of those where you will take a piece of content and go deep on it. But you are going to be combining standards in most cases to build the kinds of learning and understanding that get kids to the understandings that Common Core is asking for at the end.

To sum up—it's quite a mouthful, it's a lot of ambitious work—here are some things to think about in your districts as you wrestle with your approaches to teaching and assessing, the Common Core State Standards preparing kids for 21st century skills. One of the things that is probably obvious from this discussion is that developing these kinds of higher order thinking and problem solving require a wider range of both teaching and assessment strategies. So teachers will need to learn not only the strategies for managing the kind of work that the Common Core Standards ask for, but also they will need to learn a wider way of assessing work in the classroom that is responsive to the expectations of the standards.

Second is that if we think about the fact that assessment as an integral part of teaching in the teaching and learning cycle, valuing assessment of, for, and as learning will require new approaches both to formative and summative assessment. Now, Smarter Balanced Assessment Consortium will be providing tools for formative instructional supports, units and instructional components that are geared towards the Common Core Standards and towards the later summative assessment. So those will be in an integrated package.

There will also be interim assessments that are available optionally for those who want to use them to either see how students are doing in general in their learning along the continuum in that content area and grade level or for a particular unit or topic of instruction, so that teachers will be able to access both the computer adaptive and performance task components to work with their students in the formative and interim space to begin to develop a sense of how students learn. But just assessing kids over and over again, like weighing the cow is not enough to feed the cow, we have to be sure that teachers are learning the strategies to use those assessments productively, in the development of instruction, in the development of teaching plans, curriculum plans, and in the development of strategies that they are using.

I will say that it's my experience—I work as a teacher educator part of the time—and that it's my experience that some preparation programs prepare teachers to develop curriculum and to understand how you get from A to Z and build a whole basket of instruction and some do not, and some districts help teachers to think in curriculum terms that is beyond the lesson plan, how it adds up, how you get there from here to there, what's all the scaffolding that's needed, etcetera, and some do not. And I think this workaround curriculum is going to be a very, very important part of the teaching agenda for Common Core State Standards. And using assessment of, for, and as learning is going to be integral to that work. Assessment should always

represent what it is we want the kids to know and be able to do as well as telling us things about what they have learned.

So systems are also going to have to figure out how to integrate curriculum-embedded and on-demand assessments, the kinds that I have just described, as they develop and assess 21st century skills. How do you use those in productive ways. Curriculum expectations, instruction, assessment, and teacher development must all be aligned. We have been through 10 years of forces that have made it harder to align curriculum, instruction, teaching, and assessment. It's time now to weave them together again into a teaching and learning system, so that what kids are expected to know informs the way in which they are assessed, informs the way in which teachers are developed, and really allows us to create a coherent approach to the experiences of kids across grades and the experiences of teachers in their teacher development activities.

Finally, I would argue that engaging teachers in assessments, in developing and scoring assessments collaboratively and collegially is going to be essential to improve their professional practice and their capacity to support student learning. One of the things that's really heartbreaking when you compare U.S. teaching conditions to those in other countries—remember we started this by saying we want to be internationally comparable in what we expect students to want to be able to do—is that in countries that are at the top of the international rankings, like Finland or Singapore or South Korea, many others, teachers have usually about 15 or 20 hours a week that they are freed up to design curriculum together, to develop lessons, to do lesson study, to do action research on the implementation of curriculum, to engage in scoring and developing assessments together, and so on. And most of our teachers still have three to five hours a week of independent planning time.

In some of our schools, and I am sure some of you here have pushed the edges of that as hard as you can in the very difficult financial context that we have, which makes this even more difficult than it has been in the past. So you may have a few hours of collaborative time, and that time is like gold if it's used well, if it's used well to really help teachers engage with this. But I would say that that's going to be a critical piece, is how to help teachers work collaboratively and collegially. And some of that should be developing and using rich assessments of students around Common Core Standards kinds of skills, scoring those together, thinking about the meaning of students' work, and then collaboratively developing curriculum and instructional strategies to address that. And focusing in on that and finding some time for that will give you, I think, very strong leverage on the work that is there to be done thereafter.

So as educators in California, I think we are all used to this idea that the resources get smaller and the expectations get larger every year. So here we are. I am enormously impressed with the work that is going on in our schools in this state under the circumstances that we have with the continued

engagement and enthusiasm of educators. And taking this up. And I have seen the excitement that many districts have about taking up this really useful challenge of deepening the curriculum and learning for our kids.

So I am going to leave you with a little story that I think of a lot in these days of school reform, which have been going on now for 25 years or so, since *A Nation at Risk*. This is a story about a school reformer who got really discouraged with the challenges of change and was really ready to give up. And his friends got worried about him, and so they took him to get some extra help. They decided to take him to a séance, and they—I mean, we are at the point where you have got to go to drastic means. And they tried to contact some higher power that would help guide them in this very difficult work, and they were so pleased to contact the ghost of John Dewey.

And the reformer said, “Mr. Dewey, tell us what we can do to make all of our schools into the rich learning environments that we want for all of our students.” And there was a long pause from the other end, and then the voice of John Dewey said, “Well, that depends on whether you want to do that the ordinary way or the miraculous way.” And the guy said, “Well, I am a pretty ordinary guy, so why don’t you tell me the ordinary way?” And Dewey said, “Well, the ordinary way would be to wait for legions of angels to descend upon the schools and turn them into temples of learning.” And the educator said, “Well, I am not sure that’s going to happen in my lifetime, but what’s the miraculous way?” And Dewey said, “The miraculous way would be for the people to do it themselves.” And that’s what you are doing. Thank you very much.