

Volume II - Guide to Designing Curriculum

# Honoring Tribal Legacies: An Epic Journey of Healing



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Front Cover art: Nez Perce Village at Ahsahka (where the North Fork of the Clearwater meets the Clearwater) circa 1805. Image courtesy of the National Park Service, Nez Perce National Historical Park. Nakia Williamson-Cloud, artist.

Back Cover photography courtesy of the National Park Service.

Suggested Citation: CHiXapkaid, Inglebret, E., & Wood, S. (Eds.). (2014).

*Volume II – Guide to Designing Curriculum Honoring Tribal Legacies: An Epic Journey of Healing*. Eugene, Ore., and Omaha, Neb.: University of Oregon and National Park Service, 2014.



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# CHAPTER 5



## **The Art of Learning: From Cradle to College and Beyond<sup>1</sup>**



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## Introduction

**I**nstilling love for the art of learning has and will continue to be the greatest challenge for any society, primitive or advanced. New life needs to be prepared to survive and thrive in the society into which it is born. The human child being born into the most complicated advanced form of societal life has the greatest challenge, and those responsible for adequate child development needed for survival face the greatest of all challenges. Who are those responsible? Each member at all levels in the educational system of any society are responsible. Those who provide private and public means, develop the standards and enforce them, and educators at all levels from parents to professors should be held accountable. How is the educational system in the United States faring in its responsibility?

Is the letter of the law, requiring that each child be afforded equal educational opportunities in accordance with the United States constitution, being carried out? If we can say yes to these challenges, then a love for the art of learning will have been instilled, and the survival of coming generations require it. Let us examine and address these responsibilities. Do our institutions of learning offer adequate classroom atmospheres conducive to learning to meet today's technical and societal needs? Do the current Common Core State Standards (CCSS) meet measurable assurances for the needs of tomorrow?

## Children in Classrooms

In the United States normal classroom settings have changed dramatically as the demands of society have become higher. In light of growing pressures to succeed, we see district curricula and home environments are ever changing. These changes are severely affecting the student population, from cradle to college. In the educational system success is measured by academic marks, scholarships, and earned college degrees; in our current society measures of success include high paying jobs and material acquisitions. A media savvy society confirms and helps drive these pressures. The fast pace of change in today's technological age demands advanced learning in

all fields. With a full curriculum and rising demands, teachers and students perpetually feel pressured to perform at ever higher levels. This mounting pressure is making teachers and students feel defeated and overwhelmed, causing a quick burn out and a sentiment of inevitable failure. A common response to the multiple initiatives or learning demands from teachers, parents, or students to know how or be able to implement the expectations in classrooms has been articulated as unmanageable; increasingly the classroom environment is not conducive to teaching or learning the current standards. The mindset is that these standards are impossible or unreachable. We believe the opposite to be true.

Every child is instinctually a learner. We would serve all students well to remember that each and every child inherits a natural aptitude for learning and responds to environmental stimuli when the fundamental aim is to create independent learners in a child-centered classroom with increasing cognitive demand. One of many challenges may be providing the most effectual environmental stimuli. Our classrooms should allow students/children the opportunity to use the strategies acquired from each year of learning to be carried from one year to the next and then into adulthood. We are in a period when aligned educational initiatives should be able to benefit all the children of this nation, to help them define or feel a sense of meaning, and to guide them to develop motivation and interest amongst their peers (Goodman, 1994).

The Common Core State Standards (CCSS) framework provides a start. The CCSS can be combined with the belief that the overarching goal is to make all students meet and/or exceed expectations and nothing less. To maximize the learning potential of all would require the collaboration of teachers, parents, community leaders, and policy makers. Developing or striving to continue the extensive work to empower learning and to build upon an educational community's strengths will launch an experience of transformation extending learning well beyond the curriculum (Piaget, 1969; Vygotsky 1978).

One way to think about challenging all learners to develop and demonstrate their full potential is to identify the cognitive level at which students are processing what they are learning. A model describing this process of developing knowledge within cognition can occur along a continuum consisting of four levels:

- ☼ declarative knowledge—the *what*;
- ☼ procedural knowledge—the *how*;
- ☼ conditional knowledge—the *when*; and,
- ☼ conceptual understanding—the *why*.

This model was introduced in the mid-1980s by educational researchers Ann L. Brown and Annemarie Palincsar, and it has been used and adapted in many forms since then by educators, cognitive psychologists, and others. Here is a general explanation of the model:

☼ ***Declarative knowledge*** is the “what” of content. As its name implies, it is the type of information that students can declare, that they can repeat back when asked to do so. Declarative knowledge is important when students are learning the basics of a new subject area, such as vocabulary and nomenclature. It is also necessary for the elements of a subject that need to be committed to memory and raised to the level of automaticity—in other words, information that must be recalled instantly and accurately at a moment’s notice in order for learning to progress. While most subjects have a significant body of declarative knowledge, it is difficult for students to retain all of this without the opportunity to process at the following three levels.

☼ ***Procedural knowledge*** is the “how” of content knowledge. In general, it involves the application of declarative knowledge in predictable, routine, and conventional ways. Most content knowledge has rules or methods associated with its use. For example, English grammar defines how to use the declarative knowledge about parts of speech. The commutative property in mathematics tells students about how certain mathematical relationships work. Students need to know and be able to follow these procedures accurately. In many classes, instruction consists almost exclusively of introducing content in a declarative fashion and practicing procedures. Students who know and can use knowledge procedurally have reached a solid novice level in a subject area.

☼ ***Conditional knowledge*** is the “when” of the use of content knowledge. As students progress from knowing the content to knowing how to apply that content, the next step

is knowing when to use which sort of technique in order to apply or otherwise use the content. For example, in order to comprehend a text fully, a reader must understand the use of a metaphor or a simile, and knowing when to use these literary devices for the best effect requires conditional knowledge. Understanding under which conditions to use which statistical methods, based on the nature of the problem being studied, is another example. Conditional knowledge helps students know how to select from among a range of possible or potential methods, choosing the most appropriate, efficient, and effective approach. In other words, a procedure that may be perfectly fine in one context may not be as useful or the best choice in another. As students acquire and practice a wider range of procedural techniques, they reach the level at which they can begin to make wise choices. Students at this point have surpassed the novice level and are emerging as competent users of the content knowledge. They are becoming strategic learners.

🌱 **Conceptual knowledge** is the “why” of the use of content knowledge. Whereas declarative knowledge gives learners raw material, and procedural and conditional knowledge enable learners to do something with that material, conceptual knowledge enables learners to know and understand why they are doing what they are doing. This ability then equips learners to make better and more strategic decisions about the ways in which they want to process information and apply it to a range of complex problems or situations. Understanding that history includes multiple perspectives, some of which are contested, enables a learner to produce a far more sophisticated analysis of a time or place in the past, one that takes into account more than one possible explanation. Conceptual knowledge lets learners function at a metacognitive level to ask themselves if what they are doing makes sense and if they are accomplishing what they want to accomplish. Learners at this level are demonstrating emerging expertise in the subject area.

All four levels are critically important because as students move through each level of cognition, their retention of everything they learned at previous levels solidifies. Procedural knowledge reinforces declarative knowledge. Conditional knowledge reinforces procedural and

declarative knowledge. Conceptual knowledge strengthens all three. Deeper learning occurs when students have the opportunities to experience each level as they progress through their instruction in a subject area. Not all students will reach the same ultimate level, but all need the opportunity to process information at each of the levels, in part to gauge their own understanding of the content but, more importantly, to begin to think more like an expert in the subject area.

These levels support the use of learning progressions that are more than just a series of concepts or topics taught in order. A true learning progression will consist of more than a sequencing of the content to be learned. It will also describe learning activities along all four levels of the knowledge complexity progression that build on the content knowledge being learned. One of the true advantages of the Common Core State Standards and their culmination at a college and career readiness level is that content can be introduced, developed, and extended across grade levels until students are able to process the content at more complex cognitive levels, as specified in this four-level knowledge complexity progression.

The balance and proportion of teaching that is geared to each level says a lot about whether students are really being challenged and the degree to which they are encouraged and permitted to develop the types of cognitive skills associated with deeper learning. While different subjects and courses call for different proportions of each standard, students in general should have opportunities to process content at all four of these levels on a regular basis in all subject areas.

This is true regardless of the future path a student is hoping to pursue. The ability to process complex knowledge is a key foundational skill for twenty-first-century learners. It is no longer necessary to group students into those who will work with their heads and those who will work with their hands. All work will require a much greater emphasis on the thinking components and the ability to process information and solve non-routine problems. All instruction will need to take students to the higher levels of cognitive engagement at the conditional and conceptual levels of the model.

A second important factor that helps explain why it is important to have instruction that encourages deeper learning derives from advances in brain and cognitive science. At the heart of this body of research is the finding that the brain is malleable and capable of developing if stimulated to do so. Notions of intelligence as a one-dimensional fixed construct are being replaced with more multidimensional conceptions of human intellectual capacity. In these new frameworks, effort becomes as least as important as aptitude. In other words, it is possible to expect more of all students, and students can achieve more when they are let in on the secret that they are capable of much more if they make a sustained, productive effort to learn. Labeling them with test scores that purport to capture their “true” ability level only serves to defeat the message that their effort is at least as important as their aptitude.

Researchers have also discovered that the human brain is not like a library or some sort of grand catalog in which all information is organized into discrete packets that is grouped by topic in a neat and orderly fashion, to be recalled on demand. Instead, the brain tends to create meaning based on its sense of what is important, and it takes whatever information it has at hand and then makes the best sense it can out of it. The problem for educators is that breaking subject-area knowledge down into small bits and then teaching the bits sequentially deprives the brain of the ability to get the big picture and to figure out what is really important. Rather than storing each bit sequentially when information is presented in isolated packets, the brain tends to forget bits, connect bits up in unintended ways, leave gaps, and miss the larger purpose and meaning of the bits. Testing models that focus on the bits do not provide much insight into student conceptual understanding or the larger structure of knowledge that informs the uses of information.

The net result is that the brain struggles to retain many or most of the individual bits of information, in part because it is not receiving any cues that these bits are important, and in part because few of the bits connect with any larger framework, or schema, which the brain uses to organize and retain relevant and necessary knowledge and information. This is why students can learn and then forget content that is taught at multiple grade levels and why they can demonstrate detailed knowledge of a phenomenon with absolutely no understanding of the phenomenon

itself. This is one of the reasons test scores at the high school level on tests such as the National Assessment of Educational Progress (NAEP), which gets at conceptual understanding along with content knowledge, have flat lined over the past two decades. Teaching and learning in secondary schools in particular becomes increasingly dependent on student conceptual understanding to retain information and on learning progressions that build over time toward larger and more complex structure of knowledge. High school students are simply not making any more sense out of what they are being taught in earlier grades, nor do they seem to be retaining this information any more effectively than in the era before standards.

The CCSS is a framework for creating deeper learning that extends beyond declarative and procedural knowledge. In doing so, the CCSS establishes a common set of high expectations for all students regardless of their background or the labels given them by well-meaning adults. A key to success with the CCSS is being literate in a multi-faceted way and employing a comprehensive literacy approach. While the CCSS for English Language Arts (ELA) delineate specific expectations in reading, writing, speaking, listening, and language, each standard need not be a separate focus for instruction and assessment (CCSS, Introduction, p. 5).

It is important to note that the standards are the benchmarks or goals that specify what we want students to know and to be able to do at the end of each grade band. The CCSS set the goals, help set the objectives and the learning targets, and the schools control the means.

Learning the standards intimately is the responsibility of the reader because of the deep, rich, and increased rigor of what the standards are asking teachers and students to do. However, we must also ask ourselves what the standards are not saying. With reflection, one can visualize what sub-skills or learning progressions are needed to meet the grade level standards. The best advice given is to read and re-read the new standards like a great book. With each reading the purpose and value of the standards will become clearer.

The initial focus brings into play the dialogue and collective thinking about how to achieve optimal learning in a classroom or within the student's mindset. The capacity of the mind is beyond measure; while stimulating or tapping into the minds of children, it is critical to motivate them to

think beyond the lesson and connect it to their larger world. They should be building on who they are by using their “Funds of Knowledge” to generate change or to have agency in their own lives. We should be encouraging, motivating, and inspiring not the status quo, but the potential of what could be—*who* they could be!

No single factor may be more important to student success than the degree to which students are allowed and encouraged to take ownership of their learning. Not only does this key learning skill result in improved achievement, it is a more efficient and cost-effective way to manage the learning process. When students take ownership of learning, many more approaches to learning are possible, ranging from self-guided methods to online courses. Absent such ownership, the traditional teacher-student didactic approach is the only real option, but such an approach may not be sufficient when deeper learning is desired and when the goal is for students to master the Common Core State Standards and become college and career ready.

At the heart of student ownership of learning is a complex of intersecting skills and dispositions. Among them are the topics explored in the next sections:

- ✿ Goal setting
- ✿ Persistence
- ✿ Self-awareness
- ✿ Motivation
- ✿ Help seeking
- ✿ Progress monitoring
- ✿ Self-efficacy

**Goal Setting:** Perhaps none of these skills and dispositions is more important than having a goal or reason to learn. That goal can be as broad as desiring to develop more fully as a human being or as targeted as wanting to become, say, a medical records technician. In some ways, it does not matter what the exact goal is as long as students see the academic programs in which they are engaged as somehow contributing to achieving their goals. Having the goal to become a rock guitar player or professional snowboarder is not a bad thing in and of itself. It can lead students to develop

skills of disciplined practice and stronger self-control and self-direction, but only rarely does the goal connect very directly to classroom academic success. For far too many students, goals of this nature are not really goals at all; they are fantasies or diversions that can hinder them from coming to grips with the reality of what it takes to be ready to succeed in their lives.

Learning how to set goals should begin when students are young and then be incorporated into schooling at all subsequent grade levels. Students should learn how to set and achieve short-term, medium-term, and long-term goals. A short-term goal might revolve around doing better on the next assignment. A medium-term goal might require improving a skill area such as time management by learning how to manage time better over the course of an academic term. Longer-term goals should be specific enough to focus student behavior but broad enough to acknowledge the multiple pathways available to achieving the goal. Goals of this type generally are stated in terms of some sort of desired academic or career accomplishment, such as attending college, pursuing a major or career area, or developing an interest. Long-term goals can take many forms and can be quite fluid. The key thing is for all students to have one or more throughout their years in school.

Goals need to be recorded, and progress toward them needs to be measured regularly. One of the key things this accomplishes is a sense of causality—that students' actions matter and that students can influence or control their lives through their actions. It is worth noting that many young people come from communities in which cause and effect does not seem to hold sway, where bad things happen to good people for no apparent reason, where goals are rarely achieved and are often thwarted by the most arbitrary and unfair of circumstances or occurrences. Students from such backgrounds have a difficult time buying into the idea that hard work now pays off in the future. Giving these students tools to create some sense of control in their lives by setting and achieving goals, however modest those goals might be initially, can be exceedingly empowering and instill perseverance. Knowing how to set goals also puts youth on the road to developing the self-reliance they will need in order to succeed in postsecondary education and the workplace.

**Persistence:** Achieving goals requires the development of a constellation of skills. Most goals worth pursuing require persistence—the ability to continue in the face of frustration and failure. Many well-intentioned educators (and parents) attempt to minimize student frustration and failure by limiting challenge or by over supporting. The effect can be to create young people who are not aware of their limitations and overestimate the significance of their accomplishments. The result is fragile learners who avoid situations that might shatter their carefully crafted illusion of competence.

Others have used terms such as *grit* and *tenacity* to describe the necessary behaviors to support goal achievement. The term *persistence*, however, may be more suitable because the implication of terms such as *grit* and *tenacity* is that learners must first have obstacles to overcome in order to be gritty or tenacious. *Persistence*, on the other hand, connotes sustained effort over time and not necessarily triumphing over barriers, whether institutional, personal, or otherwise. Persistence does accommodate *grit* and *tenacity* but does not require adversity to demonstrate a commitment to maintaining effort sufficient to complete the task at hand or achieve meaningful goals. Students do not need obstacles placed in their paths for them that they must overcome tenaciously, such as poor teaching, poor facilities, unclear ends and aims, and irrelevant content, in order for them to demonstrate they are worthy of college and career opportunities. Learning challenges need to be carefully crafted to reward persistence, not create additional barriers.

**Self-Awareness and Locus of Control:** Competent learners are cognizant of how good their work is. They know, independent of the teacher's judgment, whether what they are doing is of high quality. Students with experience in the performing arts and competitive sports perhaps understand this phenomenon best. They know that, ultimately, it does not matter how a parent, teacher, or coach assesses their achievement. The true judgment is in the performance itself, and the final judgment often emanates from an external audience that has its own criteria by which it is judging the performance.

Self-aware learners are capable of saying a work product is not good enough even when they have received a high mark or praise for it. They can do this because they have sufficient

confidence in their abilities to improve, largely through hard work. They do not need to explain away a less-than-stellar performance by blaming others. They are comfortable discussing the strengths and weaknesses of their work, taking pride in what they did well, and planning how to improve in areas where they did not. Self-aware learners have an internal mechanism of sorts that tells them how well they are doing. They do not need to be perfectionists who cannot take any satisfaction even from a very good performance or product. They are, however, realists who on occasion come to grips with the fact that they must settle for less than their best effort because they do not have the time or because the improvements they know they could make would not be noticed. They do not, however, kid themselves about what they have done and what they need to do.

This type of internal locus of control manifests itself in many ways. Effective learners who possess a range of key skills and techniques know how to become motivated to complete challenging tasks and assignments, even in areas where they may be less interested in the subject. They use a combination of internal and external motivation. Although many educators extol the virtues of intrinsic motivation, wherein students do things for the sheer joy of doing them, extrinsic motivation has its place as well. Knowing they need good grades in order to meet admission standards if they are to pursue their goal is just as important for successful students as completing an assignment for the sheer interest or excitement generated by the topic.

Students need help learning how to identify and harness both forms of motivation and to recognize that they are unlikely to do well in most classes without a combination of the two. While teachers and other adults can create systems that maximize student motivation, ultimately the students must manage their own motivation. They need to learn how to gear up even in situations where they are not naturally excited. They need to be given the tools that effective learners use to get through the tough times that all learners experience over the course of their schooling. Equipped with these tools and strategies, learners are ready for postsecondary environments, workplace training, military, and other environments that expect them to be motivated and engaged.

These types of learning skills can be taught to all students. Currently the tendency is to view many of the key learning skills as personality traits that some students possess and others lack. The

evidence, however, suggests that these skills are all highly teachable, but that they are going to be more challenging to learn for students from some backgrounds. When students do not necessarily believe they can be successful, it is harder to get them to internalize these skills. In this case, success can breed success, and students can be taught these skills incrementally and come to see that they are better and more successful learners as a result.

*Help Seeking:* Skillful learners know when they need help. It is surprising how many learners do not know when they are in over their heads. And even when they do, they do not know how to get the help they need or simply do not go after it. Our research and that of others suggests that the students most in need of help are the least likely to pursue it on their own. Students from low-income families, members of certain ethnic minority groups, and those who are first in family to pursue postsecondary educations tend to struggle in college because they do not know how to get help, or they believe that accepting help indicates they are not really college material in the first place. They inadvertently set a high bar for themselves, in part because they believe that all the students who are succeeding are doing so without the need for help.

In contrast, high achievers know how to seek help so well that sometimes they institute a near-monopoly on such resources. Perhaps online learning environments will level the playing field because all students can pursue help anonymously, but it is more likely that the anonymity will play against those who most need help. A more effective approach is to teach the students who most need it how to access available resources on their own. They need to develop a mind-set that seeking and accepting help is not tantamount to failure. They need to know that everyone needs help at one point or another; they may just not see how others are receiving the help they need.

Another way to think about many of these self-monitoring behaviors is the notion of student self-efficacy, which is the idea that learners can produce the effect or outcome on the learning that they desire. Self-efficacy is the sense of control over the factors that make a difference for success in a chosen endeavor. This concept is closely related to empowerment because learners can legitimately advocate for and pursue their own success and have the power to do so.

Keeping up with research and theories about deeper learning, while building in students a foundation for college and career readiness, is a move in the right direction. Research and professional development is imperative for the teacher's capacity to implement any initiatives while working with the education system. The ELA CCSS are addressing the need for comprehension skills and the ability to critique and reason. Students are asked to do research in order to justify a claim while attending to a text; in addition, they are learning to use text to provide the evidence to support one's opinion. If ideas do not resonate from the learning process, it will not attach to memory. Let us inspire students to use their knowledge to generate change in our world. Students must have ample opportunities to take part in a variety of literacy rich, structured conversations, whether as part of a whole class, in small groups, or with a partner. Being productive members of these conversations requires that students:

- ✿ contribute accurate relevant information;
- ✿ respond to and develop what others have said;
- ✿ make comparisons and contrasts; and,
- ✿ analyze and synthesize a multitude of ideas in various domains.

As a reader we invite you to think of various domains in multiple contents/disciplines, settings, and purposes. In this context consider place-based literacy, multi-dimensional and inter-woven culturally and generationally. Let us revisit this term of "place" as identified in the introduction beginning with a quote from one of Luisa's advisors from the University of Colorado who was commenting on her "Analysis of My Autobiography" in graduate school: *"Your analysis made me realize that for you, identity is linked with **place**—'El Valle.' I wonder what would happen when you no longer live there. I guess you keep the connection growing by visiting often."*

### **Luisa's Reflection: Looking Back**

Through the autobiography I had written for my graduate program in 1996, I was asked to tap into the “funds of knowledge” of my family. Each family member interviewed for my autobiography helped me align each experience of my life as it contributed to the sources of my literacy. Each family member without fail connected it to a historical context from the geographical region from which they came.

The San Luis Valley in Colorado, where I grew up, was designated a national historic district in 1976. Long ago, during the eighteenth century, three divisions of Comanche Indians ruled Colorado's plains. They had been armed by French explorers. The Utes claimed the valley had been theirs forever. Other Native people—Comanches, Kiowas, Navajos, Pueblos, Apaches, Arapahos, Cheyennes—knew the valley, too. Back in 1598, don Juan de Oñate had claimed the valley for King Phillip II of Spain. Such was the state of affairs in August 1779 when Juan Bautista de Anza, Governor of New Mexico, allied with and accompanied by the Utes and Jicarillas, led his Spaniards against the Comanche Chief Green Horn and changed forever the history of this region. To historians this is only the textbook history of the San Luis Valley, but to the descendants in the region it is living history. They were never conquered culturally and each independent culture is alive and thriving. Most languages were preserved and remain in use. Native American Tribal tongues, as well as French, Spanish, and English are all spoken, depending upon one's company. And, yes, claims to Native offspring, when orphaned, are fought over in the United States courts. Native Americans still maintain their sovereignty, and the Spanish and French retain their cultures. No, this history is not taught in the schools but in the homes, through customs and norms, established religions and traditions. The people of El Valle are all ferociously proud of their heritage, and equally proud of their nation that permits them this freedom.

During the interviews made in preparation for the autobiography, each family member had a historical context and special moments to share. Every detail in relation to my ability to become a literate and a functioning member of society is in direct connection to my lineage and multi-cultural background. My culture, history, place of my parents' birth, and community helped with my ability to become the lifelong learner I am to this date. Please note that this written project was not a prescribed lesson, but an alternate curriculum that took researching and reading parallel historical texts along with interviewing my elders to determine what was fact vs. opinion. I didn't learn this or “my” history in the K-12 school setting. Nor were the Comanche Tribe's nor the Spanish immigrants' history introduced throughout my academic career. The impact this graduate school experience had on my life and career calibrates with who I am today as a leader. I know it takes an individual to decide what he or she will learn, but it is important to recognize the environment in which students learn. It is important to build upon the lessons of the past to help inform our future as we live the present day.

Historically, the understanding of “place” has been the cornerstone of teaching and learning in Tribal communities. As described in the chapter, Place-Based Multiliteracies Framework, place is a concept encompassing multiple interconnected elements, including ecosystems, homelands, physical features, plants, animals, peoples and their cultures, languages, stories, health, and wellbeing. Understanding this complex entity requires a multilayered framework, such as that presented by multiliteracies. A place-based multiliteracies framework Honors Tribal Legacies through exploration of “place” using a range of modalities or “design modes,” including visual, auditory, tactile, spatial, smell/taste, movement/gestural, linguistic, and spiritual. The framework begins with what students know as a foundation for new learning. Students are then explicitly taught means for using diverse “design modes” to explore specific situations. Stakeholders associated with a specific place are identified and their perspectives are shared and examined from different vantage points. Understanding and respecting these multiple viewpoints serves as a foundation for developing creative responses to challenges faced in real world contexts.

Place-based inquiries are not in conflict with the CCSS. The CCSS allow teachers to have the ability to make choices in their lessons as long as they maintain an emphasis on attending to the rigor of cognitive demand in an integrated comprehensive way. The example of the autobiography that was not researched and written until graduate school should be re-considered as an opportunity for children. Imagine what this type of personalized research, writing, speaking, listening, critiquing, and synthesizing could contribute to a student’s identity in middle school or high school. To bring a lesson to life as it connects to the student’s identity in learning while attending to the cognition of learning becomes more meaningful and valuable to students. Curriculum, instruction, assessment, engagement, inspiration and goal setting must correspond with where students are in the present day as learners. An instructional choice has to come from within. If teachers use prescribed lessons with the outcome being all the same, some children will continue to fail. To transform one’s teaching and practice will require meeting the students’ needs by building on their strengths, considering who they are culturally, and what they know.

### **Luisa's Reflection: Building on Strengths**

As a classroom teacher, several of my students exhibited severe behaviors, such as impulsive behavior, an unwillingness to learn new concepts, an inability to stay on task, an unwillingness to practice self-assessment, intense feelings, dysfunctional coping behaviors while working with others, and some were affected by outside stimulation. As a practical example, I tied engagement and focus to a thematic lesson over a period of time; it was successful and brought forth amazing work from all of my students. The children who would give little or nothing from a prescribed lesson gave me optimal work. My end result was a beautiful 50-page published book written and illustrated by first graders. We celebrated by performing an extension of a separate authentic story written by the students as well.

Not only did I bring my class together with this project, it created a connection with the parents, who were drawn to help in the classroom and beyond the school day. For example, a first-generation, newly-arrived parent from another country and with limited English language ability came to our school community. She thanked me profusely at the end of the year, expressing how she had been able to practice English alongside her daughter throughout the year. In my opinion, my children felt successful, and it was a validation for me that all students, regardless of their background, can succeed when we have high expectations. I know this to be true, and I would tell my students, "This is our classroom, our home of learning, and we live here for the duration of the day. Here is where we can make difference." As William Glasser (1990) mentions, we cannot control the inherent factors of the child's world but we can control what happens at school. This is where we can help a child achieve success.

## **Why the Common Core State Standards?**

In order to implement the common core it is imperative that we examine the document itself. We highlighted a portion of the of the CCSS introduction to help explain why. This will help create a common language that is kept consistent throughout the implementation of the standards. We do not wish to begin with our interpretation but with the big ideas about what the transition will look like in a student whose education has been shaped by the standards ever since kindergarten. A recommendation is to read the CCSS Introduction section multiple times with practitioners in the field and talk about what it means to our students. This process will help create a foundation of clear expectations as we look at the whole child, using the CCSS text as a source for understanding implicitly and explicitly. A reader needs to compile information across the text and draw inferences based on patterns found in the details, connecting them to the whole

of the text. This process is pivotal before we can take the CCSS to application or implementation. This reading strategy or process is what we are asking students to do and what we should model for teachers as an expectation of what we want readers to demonstrate, to know, and to be able to do within their teaching or learning. “As specified by the CCSSO and NGA, the standards are (1) research and evidence based, (2) aligned with college and work expectations, (3) rigorous, and (4) internationally benchmarked” (CCSS, Introduction, p. 3). The descriptions that follow are not standards themselves but instead offer a portrait of students who have met the standards set out in this document. As students advance through the grades and master the standards in reading, writing, speaking, listening, and language, they are able to exhibit with increasing fullness and regularity these capacities that are expected of the literate individual.

### At a Glance: Students Who are Career and College Ready for Reading, Writing, Speaking, Listening, and Language (ELA, CCSS, Introduction, 7)

**They demonstrate independence.** Students can, without significant scaffolding, comprehend and evaluate complex texts across a range of types and disciplines, and they can construct effective arguments and convey intricate or multifaceted information. Likewise, students are able independently to discern a speaker’s key points, request clarification, and ask relevant questions. They build on others’ ideas, articulate their own ideas, and confirm they have been understood. Without prompting, they demonstrate command of standard English and acquire and use a wide-ranging vocabulary. More broadly, they become self-directed learners, effectively seeking out and using resources to assist them, including teachers, peers, and print and digital reference materials.

**They build strong content knowledge.** Students establish a base of knowledge across a wide range of subject matter by engaging with works of quality and substance. They become proficient in new areas through research and study. They read purposefully and listen attentively to gain both general knowledge and discipline-specific expertise. They refine and share their knowledge through writing and speaking.

**They respond to the varying demands of audience, task, purpose, and discipline.** Students adapt their communication in relation to audience, task, purpose, and discipline. They set and adjust purpose for reading, writing, speaking, listening, and language use as warranted by the task. They appreciate nuances, such as how the composition of an audience should affect tone when speaking and how the connotations of words affect meaning. They also know that different disciplines call for different types of evidence (e.g., documentary evidence in history, experimental evidence in science).

## At a Glance: Students Who are Career and College Ready for Reading, Writing, Speaking, Listening, and Language (ELA, CCSS, Introduction, 7)

**They comprehend as well as critique.** Students are engaged and open-minded—but discerning—readers and listeners. They work diligently to understand precisely what an author or speaker is saying, but they also question an author’s or speaker’s assumptions and premises and assess the veracity of claims and the soundness of reasoning.

**They value evidence.** Students cite specific evidence when offering an oral or written interpretation of a text. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they constructively evaluate others’ use of evidence.

**They use technology and digital media strategically and capably.** Students employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use. They tailor their searches online to acquire useful information efficiently, and they integrate what they learn using technology with what they learn offline. They are familiar with the strengths and limitations of various technological tools and mediums and can select and use those best suited to their communication goals.

**They come to understand other perspectives and cultures.** Students appreciate that the twenty-first-century classroom and workplace are settings in which people from often widely divergent cultures and who represent diverse experiences and perspectives must learn and work together. Students actively seek to understand other perspectives and cultures through reading and listening, and they are able to communicate effectively with people of varied backgrounds. They evaluate other points of view critically and constructively. Through reading great classic and contemporary works of literature representative of a variety of periods, cultures, and worldviews, students can vicariously inhabit worlds and have experiences much different than their own.

If we learn to make the experience of learning meaningful as it relates to the whole child by embracing a comprehensive approach to multiliteracies, the former tension between student and teacher will be lessened while simultaneously motivating the learner. We cannot drastically change culture or inherent factors, but we can immediately change the school environment. Having access to the ability to think critically about what is being read and to understand what the author is trying to say can be supported by parallel texts during that same timeframe to increase the cognitive demand as we think of how to extend thinking with the ability to articulate new knowledge or perspective (Hess, 2009). Not only are we encouraging close reading, but we are nurturing the

ability to communicate and write about what was read by supporting it with evidence in text. This will allow for success, by graduating the students into society with the tools for making better choices while thinking critically. This change will ultimately establish a better society. Change becomes a real life component.

## How Can Teachers Help?

If we change the methods of teaching from schooling to education we can change the outcome from failure to success. First, we must understand our children. If we know our children we can meet their needs more specifically. For example, if little Michael is in control of his parents with his overt behavior, we then know this behavior has created a patterned response for Michael to obtain control. Our next step would be to try and work with him on making better choices that produce results that will then become conducive to learning. This ties to the locus of control as we think of the high executive functions or skills needed to be proficient in school.

Knowing our children requires the establishment of community between school and children. Once a relationship is developed a natural mutual trust between the child and teacher will occur. Extending trust that enables children to know they are safe will also empower learning. Students participate in a risk free environment and learn that it is ok to make mistakes, but they also understand those are the building blocks of success, building on those as lessons. Children are then better prepared to make their own choices, allowing them to feel a sense of control over their environment, and hopefully achieve success by gaining education. In order to promote success we have to promote improvements in our education or schooling methods. The old method of being taught “at” and then having to regurgitate facts is outdated. Facts imparted in this way do not become part of an education because they are no longer applicable in the post-schooling world. Education occurs when what students have learned can become useful and extensible.

The CCSS are now asking for systemic changes to literacy and mathematical practices and learning. We are asking learners and teachers to attend to the three shifts as we transition to the ELA CCSS. Building knowledge through content rich, non-fiction texts is playing an

essential role in enhancing literacy as set forth in the standards. According to the guidelines set forth in the standards, teachers in K-5 classrooms should strike a 50-50 balance between assigning informational and literary readings. The goal is for students to develop mutually reinforcing skills that exhibit a mastery of standards for reading and writing across a range texts and classrooms (CCSS, Introduction, p. 5). The ELA Standards place great emphasis on students writing to sources (i.e., using evidence from texts to present careful analyses, well-defended claims, and clear information). Rather than asking students questions they can answer solely from their prior knowledge or experience, the Standards expect students to answer questions that depend on their having read the text or texts with care.

To build a foundation for college and career readiness, students need to learn to develop their writing as a clear form of communication for an external audience (ELA, CCSS Writing, p. 18). A clear shift for reading closely and attending to academic vocabulary is clearly articulating the need for attending to the deep meaning of the text. Shifting literacy practice from focusing solely on the skills of reading and writing, the Standards highlight the growing complexity of the texts students must read to be ready for the demands of college and careers. It is worth repeating often that the process of achieving literacy success comes from utilizing multiple approaches and weaving each literacy skill or sub-skill through the continuum of literacy learning progressions while also attending to cognition.

Theoretically, we know that making education a meaningful experience is central to the core in learning and equally important is enticing learners to do more with their education. As stated in our previous real world example, first graders not only published their own story, they took it a step further, presenting and performing their own story in a class play that pulled in the school community. This production was an impressive feat for first-graders who had been faced with low expectations from other teachers as a result of their behavior, second-language acquisition, and low socio-economic status. When the educational experience becomes a process it becomes exciting and valuable.

Traditional schooling, in general, has not allowed for choices. Children are handed a curriculum and expected to learn what is being taught. At times, the objectives are forced. A student may learn the content of Social Studies/History from memory for example, but the content itself does not become meaningful because it was not tied to anything familiar to a child's background. Ask yourself, "How many history, government, or social studies lessons do I truly remember from school?" This is an example of what we consider "schooling." It becomes education when we bring history to life. It is when we include the "what and why" that it becomes important to learn history.

### **Luisa's Reflection: Schooling vs. Education**

Why is Martin Luther King important? I learned this part of history very well. As I reflect on my experience as a middle school student my 8th grade teacher tied it into my personal history of being Latin American or Latina, and how what he did impacted my personal and current life. His civil rights leadership made it possible for me to attend college or, as she put it, "People died so you could sit in that seat today! Never waste a moment of learning time." This was only the tip of the iceberg. My teacher made our class ponder questions about where the civil rights movement really began. I did a research paper that led all the way back to the Native American History before the settlement of the colonies. It was not until many years later that I was informed of my pedigree and the history of the people who came to the "New World," now known as the Western Hemisphere. In tracing my ancestors, I was able to appreciate more profoundly what it meant to be a considered a Latina.

I still remember and feel the gifts of Ms. Jacqueline Hunt's teaching. I pay tribute to her passing, not only was she my 8th grade teacher, but she became a friend for life. She made sure to keep track of me until she left this earth several years ago. Her husband called me in Washington to tell me how special I was to her and I would always be her "Weezie." My memories of Ms. Hunt will stay with me for my lifetime. She changed my life forever, and we were still friends until her passing. This is my example of education. Educating our students is important. Using "Funds of Knowledge" (Greenberg, 1989, 323) will develop a context of learning that is personally integrated with the student's personal background. This becomes an educational process not a schooling process.

A report from the National Research Council<sup>2</sup> makes clear that transferring what is learned in one setting to an unfamiliar one is not easy. Students must work diligently over extended periods of time to develop emerging expertise in a subject area. In the process, they acquire not just the skills associated with the subject area, but they also begin to understand how experts think differently than novices do. This type of metacognition helps them when they begin to learn something new. They not only apply content knowledge they have learned elsewhere; they also understand the process of moving from novice to expert learner, and they can accelerate their learning in new areas because they know what expertise looks like and can compare their current state of knowledge and skill to a higher, desired level.

Students who have developed expertise in something, almost anything, have a distinct advantage over students who have never reached a level of high competency in any area. Think of students who are highly skillful musicians or have achieved a degree of expertise in particular hobbies or interests. These students know how to work hard to achieve a goal and the amount of work it takes to be successful in an area. They know and appreciate better the gap between where they are and where they want to be and how to close that gap.

The context of the classroom also influences how students learn, as does their relationship to one another and to the learning tasks. In other words, the kinds of interpersonal and intrapersonal skills students are developing and using in the classroom affect their ability to understand, process, and retain the content information and concepts they are being taught. This is particularly true when the goal is for students to engage with complex content organized around key ideas and concepts of a certain subject area.

Students need to understand the underlying principles of what they are studying if they are to apply these to new and novel situations, especially beyond the structured opportunities to practice that they are provided in class. They need to understand the nature and types of problems they will encounter in the subject area, the solution strategies and options available to them, and how the two interact with one another. In other words, they need to develop the metacognitive skills necessary to make decisions about how to process what they are learning. Eventually, they will

draw on their understanding of the content they have learned and the problem-solving techniques available to them to address challenges or complete tasks that are entirely outside the boundaries of what they have practiced previously.

## Comprehensive Systems

“A system is a group of linked parts, assembled in subsystems that work together toward a common end” (Redding, 2009, p. 7). The whole system functions most efficiently and effectively when the roles of the people and the subsystems they compose are coordinated. “Systematic implementation practices are essential to any national attempt to use the products of science—such as evidence-based programs—to improve the lives of its citizens” (Fixsen et al, 2008). Following a systemic, multi-component plan to improve the proficiency of both struggling and highly-skilled learners ensures learners who are college and career ready.

Learners who achieve literacy success are surrounded by committed, supportive systems. Family members are the catalysts in literacy development. High performing organizations and schools become partners in continuing literacy success, and are characterized by a clear and shared focus. Having shared goals, clearly articulated and well publicized, are especially critical when one considers the tremendous change that must take place for all learners to achieve a competent level of literacy. System-wide commitment, therefore, is the belief held by all participants that literacy achievement is a key and achievable mission of our communities and schools. Commitment is the final element critical to the success of a sustained and systemic approach. Many different groups and individuals contribute to the literacy development of a child. Such groups and individuals include, but are not limited to:

- Family members
- Early childhood practitioners
- Medical and health care providers
- Higher education faculty
- Teachers

- ✿ School leaders and staff
- ✿ Community members
- ✿ Geographic environment
- ✿ Learning community
- ✿ Policy makers including the state education agency, and people in professional development

At the center of the system are our children and students. The purpose of the system is to ensure that each child achieves literacy success to be able to think, create, question, solve problems, and reflect in order to participate effectively in a pluralistic, global society. Each action taken within the system and each member of the system must address or answer the following question, “What is it that children/students need to know and be able to do to achieve literacy success?”

While we build our future with our children, we are working on creating change. It is our social responsibility to change. Working with not only our communities, but our neighboring communities in other states, the nation, and the world, sharing what we know and being aware of what we do not know, makes us interactive versus reactive as we work within a system. A comprehensive literacy system could also be reflective of our work with other states, contents, education systems, work systems, community systems. Life is different, as we now know it, given the power of technology and communication. A conversation today is beyond this space and time and has few limits. We are no longer limited by the concrete walls of our school buildings, nor are we confined to paper and pencil learning. This is twenty-first-century learning. Information is transferred as quickly as we can type it. We teachers are no longer alone, but we are **together** as we think of preparing our children for an uncertain future. We have to interact with others to have engagement and create consensus building or our work will face resistance. We are part of a learning community—and not just in our district, state, or nation; we are now citizens of the world.

As we think of education within a system, our thinking has to change. We do not speak of a system of opposites, such as “them” and “us.” Rather, a system is grounded in a context, and we need to create a common language and a look through a comprehensive lens. In this case,

comprehensive refers to a holistic system, a child situated in the center of interlinking communities as they extend to the nation and the globe. No longer are we sitting in an environment where “our” decisions do not have a ripple effect beyond ourselves.

Visualize, if you will, a pond into which someone has just thrown a pebble. The stone may progress straight down until it lands on the bottom of the pond. But, as we think of the stone’s journey, it travels through several sub layers of water—symbolic of life—effecting and rippling the status quo. Each progression towards the pond’s floor has created a different wave or movement. The end result of the action might be only what we think of in our mind’s eye as the initial action, such as “I threw a stone.” At first we might simply see the wave, but in thinking more deeply, we recognize it as an energy force that will move the additional layers underneath.

Literacy is now that pond. Research has come together and shown the link in learning progressions as we think of it within all contents, contexts, and the whole child. Each child is different from the next, but the end goal for our system is to make sure every child is literate. Being literate has taken on a whole new meaning. Literacy is a layered approach that is inclusive of language, reading, writing, thinking, speaking and listening. The ELA Common Core State Standards needs to be taught in tandem with learning progressions and content areas as we think of the whole child. It is important that we rethink the term literacy. It is important to revisit the idea that we are part of a learning community as we rethink how to teach literacy, what standards to address to become fully literate, and how to define what a literate child is. The standards have changed, and this will impact instruction, change the assessments, and, in the end, determine what a child will be. Literacy is no longer just reading, writing, or communication taught in isolation, but in tandem across the content areas. Literacy is not just a demographic, culture, or language issue. It is the essential grounding light that becomes the flow of critical thinking and learning progressions.

### **Luisa's Reflection: Meeting the Needs of Children by Knowing**

As a reading specialist I used multiple measures to determine the learning strengths of each student. In my own literacy and language training I learned the value of a comprehensive assessment system (universal screener, progress monitoring, diagnostic, formative, and summative assessments) for developing deeper student learning. We were taught to capture and save student profiles to ensure the most effective growth over time by using demonstrated evidence for our students. To help with transitions, student profiles were then passed with the student into the next grade and helped with classroom placements. In the grade band teacher conversations, we knew where each student's learning had progressed at the end of the previous school year. In the school year 2000–2001, we were aligning our assessment system down to the student level. As rudimentary as it was, we used developmental continuums to help determine instructional practices for the following year. It was a brilliant process that generated very specific teacher conversations with learning plans crafted for each child. Within each profile we included beginning, middle, and year-end writing, reading, and math samples as we highlighted demonstrated skills on a learning progression introduced by Bonnie Hill Campbell. Her work helps inform current learning progression work for the Smarter Balance. "Roaming Around the Known" (RAK; Clay, 1991) is the expression I liked to use when, as a reading interventionist, I observed the children at the beginning of the year. I later developed the skill to bring it up to scale for my whole classroom, using this intensive reading training method to inform my instruction. I would capture evidence anecdotally and save it to target each student's personal instruction.

Although Dr. Marie Clay applied her observation directly to reading, writing, speaking, and listening, the RAK can be used to observe all methods of learning. It need not be limited to the content of literacy. In my current practice, I call this formative assessment while providing just-in-time feedback that would have an immediate impact on students' learning. As I developed and sharpened the tools I learned in my Reading Recovery training, I realized how invaluable they later became as I embarked in Orton Gillingham training: "In the summary of the Observation Survey the teacher brings together what she has observed. She describes what the child can do, and what is partially known, at the boundaries of his knowledge as it were." (Clay, 1991, p. 71)

We cannot meet the needs of our children until we know who, what, where, when, and how our children can learn. Instructional supports that supplement the core instruction/curriculum while attending to standards require our reflection and the collection of evidence (through any form of assessment) to determine critical areas of instruction. Clear and substantial evidence is important to determine next steps and make informed decisions—in an unbiased approach—to assess quality student proficiency for all students.

# Scoring Student Work for Deeper Learning

It is possible to score student work against standards that challenge all students to be more engaged and to think more deeply about what they are learning. The scoring guide explained here is built around six organizing concepts, stretching along a novice-to-expert continuum (see Figure 1). The organizing concepts are insight, efficiency, idea generation, concept formation, integration, and solution seeking. As learners become more skillful, they progress in performance in each of these areas, from emerging novice, to novice, and then to accomplished novice, emerging strategic thinker, strategic thinker, accomplished strategic thinker, and emerging expert. This creates 42 cells, each of which holds a description of student work. Teachers can use these six concepts and seven levels to analyze a range of sophisticated student work products along a continuum of cognitive development and learner competence.



Figure 1: Continuum of Novice-To-Expert

Many educators find it challenging initially to cope with the complexity of a model with this much information and this considerable number of categories. However, capturing deeper learning does require some attention to complexity and performance along a number of cognitive dimensions. The good news is that as teachers use the scoring guide more, they quickly internalize the elements and become adept at rating the cognitive complexity of student work. In this case, teachers themselves must experience deeper learning before they can apply the scoring guide in an appropriate fashion. When teachers do understand the concepts embedded in the scoring guide, they have a powerful lens through which to gauge the depth and complexity of student learning. Each of the organizing concepts is explained here in more detail:

- 🌱 *Insight* involves the ability to use the rules of the subject area in a procedurally correct fashion and then to become progressively more insightful about how to go beyond literal interpretation of subject area rules to combine or skip steps, ignore a rule if a more elegant solution is available, and, ultimately, use the rules intuitively rather than literally. Learners who become insightful in the use of disciplinary rules are able eventually to generate more original and interesting work.

- 🌱 One characteristic of novice learners is that they have difficulty completing tasks with *efficiency*. Experts spend much less energy than novices do on comparable tasks. This phenomenon can be observed in a wide range of fields, such as sports, where novices struggle to perform the same routine that the expert accomplishes effortlessly. Watch beginning skiers or snowboarders floundering on the slopes, expending vast amounts of energy just standing and maintaining their balance; then compare this with the accomplished skier or snowboarder who makes the sport look effortless. In deeper learning, efficiency is the ability to use the best methods possible to complete a task such that someone scoring the task would find few ways in which it could have been done more efficiently. Most learners complete some elements of tasks efficiently while struggling with others. A lack of efficiency can lead to a confusing final product. Students may even give up on parts of the task, project, or assignment. This then affects its overall quality.

☼ *Idea generation* is another important variable that distinguishes levels of deeper learning along the continuum. Novices produce few original ideas, preferring to repeat well-worn observations and conclusions because this is what emerges from following a prescribed set of procedures. As learners develop strategic competence, they venture into the arena of idea generation, perhaps tentatively at first. Many of the initial ideas they put forth may be variations on conventional wisdom in the subject area. As they advance in expertise, they eventually come to the point where they are experimenting with ideas that are more novel and unconventional. Although not all learners get to this point, most can reach the level where they are offering ideas that are their own and not simply restating what they have been told or have read.

☼ *Concept formation* is the idea that as learners become more sophisticated, they begin to organize their work around concepts rather than simply presenting information in a series of statements. Concepts are a means to organize information, observations, or ideas. They are the next level up the cognitive structure chain from purely observational conclusions. More expert learners consciously design work products around a set of concepts, making sure the conceptual structure is firmly in place before beginning to generate the final work product. For example, students who are asked to complete an assignment in which they explore and explain the way truth and beauty are represented in three separate pieces of literature will need to be able to formulate concepts and organize a piece of work around them.

☼ Work products that show high levels of *integration* avoid the novice problem of having each section of an assignment be essentially stand-alone in nature. Products that are integrated can have distinct sections, but they contain connections within and across sections. Novice literature reviews that describe study after study without making connections among the studies or summarizing the significance of them demonstrate novice-level performance. So too do papers that contain bulleted lists with scant explanation or elaboration accompanying each list and minimal connection among lists. Expert performance on

such a task would include periodic summaries of the points being made in the studies, a section comparing and contrasting findings, and an overall summary that synthesizes and integrates the observations and generalizations offered throughout the review. The paper would be a coherent whole that the reader would find easy to understand and would view as a value-added interpretation of all the specific information included in the review.

🌀 *Solution seeking* is the act of resolving the problem or issue that the task poses. This is not the same as getting the right answer, when there is one, although this is one component of solution seeking. Beyond the right answer, it is about proposing a result that is responsive to the question posed initially. Novices often do not answer well the question they are asked to address, in part because doing so requires either effort or insight that may be difficult for them to muster. It is easier to respond to a question they wish they had been asked than to respond to the one they were asked. As learners become more strategic, their solutions improve and become better aligned with the challenge posed by the task. Expert solutions are cogent, coherent, and completely responsive to the task as posited.

The six constructs embodied in the scoring guide serve as examples of how deeper learning can be examined in ways other than conventional measures of right and wrong or of open-ended rubrics, such as *approaches*, *meets*, and *exceeds*, which provide little information to students about what they need to do to improve their performance. Assessing deeper learning does require thought by the assessor and attention to the quality of thinking demonstrated by the student, but employing a structured framework for feedback to learners tells them how to improve their technique as thinkers and the work products they create.

Note also that for students to move from novice to emerging expert as strategic thinkers requires many opportunities to practice and develop these skills, not one or two assignments in eleventh or twelfth grade. This type of complex cognitive development occurs over an extended period of time with multiple opportunities for practice and corrective feedback. For this reason, instruction needs to be organized around K–12 learning progressions that develop deeper learning in addition to content acquisition.

## Conjunctive vs. Compensatory Systems

*Conjunctive versus compensatory standard setting.* In the assessment world, two basic approaches are commonly used to determine if someone meets a standard when multiple criteria or performance standards are being used to make the determination (as will be the case when the consortia assessments are fully implemented on their own or in combination with other state-specific measures). A conjunctive system requires students to meet a defined level of performance on all measures. A compensatory system allows for some variation in scores across measures (see Table 1).

<b>Table 1. Example of a Conjunctive Approach: College Readiness Benchmarks by Subject</b>	
<b>Subject</b>	<b>Percentage</b>
English	67
Reading	52
Mathematics	46
Science	31
All four subjects	25

Source: The Condition of College and Career Readiness 2012 (Iowa City, Iowa: ACT).

If a state follows a conjunctive approach and requires students to meet specified performance levels on several measures, then fewer students overall will reach the required level to be deemed ready. Table 1 presents an example of what a conjunctive approach looks like. The ACT computes its annual determination of the number of students nationally who are college ready by setting a cut point on each of its four tests (English, reading, mathematics, and science) and then determining how many meet all four. In 2012, 67 percent of students met the readiness standard in English, 52 percent in reading, 46 percent in math, and 31 percent in science. Under a conjunctive system, no

more than 31 percent could possibly meet the standard because this is the number who met the standard in the area where the lowest percentage met it, science. The actual figure is 25 percent because 6 percent of students who met the science standard failed to meet one of the other three standards.

The net result is that fewer students achieve the overall standard when a conjunctive approach is taken. The conjunctive approach works best when making a broad generalization about the performance of a whole group, as in the example. It is less effective when it is applied to individual students, some of whom may fail to reach the required performance level on only one of the exams and therefore not meet the overall standard but still be capable of succeeding in a particular program of study or major in college. This is a problem because, for some students, falling short on one of four measures may not have a significant practical effect on the likelihood of their subsequent success.

A compensatory approach allows some flexibility. A student could use stronger performance on one measure to compensate for a score that fell below the standard on another but above a specified minimum. The advantage of this approach is that more students are going to meet the overall standard. The disadvantage is that individual students may have more overall variation in their knowledge and skill levels than students who are declared to meet the standard on all measures. The compensatory approach does not generate information about the knowledge and skills of groups of students that is as easy to interpret as does a conjunctive model.

The strengths and weaknesses of conjunctive and compensatory methods are important to understand. One assumes that all students need to do all things equally well to be recognized as being college and career ready. The other is based on the belief that a college- and career-ready student is someone whose skills may vary within a defined range, but can compensate for weakness in some areas with strengths in others.

This is a critical distinction because it influences a whole range of decisions about how to organize instruction for students, particularly those who are struggling. The conjunctive model suggests that interventions focus primarily on areas of student weakness, regardless of their future

interests. A compensatory approach acknowledges student strengths and allows students to continue building on them while not ignoring their areas of weakness.

*Trade-offs between conjunctive and compensatory.* If college readiness is defined simply as the ability to enter a four-year university without the need for remediation, then a conjunctive approach is probably a good way to go. That is because students are expected to be ready for the full range of general education courses across multiple disciplines. They need to be proficient in the uses and applications of English and mathematics to science, social sciences, and related academic areas because they will take courses in all of those areas to meet their breadth requirements. The assumption is that a sufficiently high score on English and math exams means they are ready for all of these courses.

Students going on to postsecondary studies in programs that do not require the full range of academic disciplinary knowledge may have more room for variation in readiness measures, particularly test scores. This may also be true for students who are very clear about the college major they wish to pursue. While all students need a foundation of academic knowledge and learning skills, a student entering a program with an emphasis on basic numeracy, such as bookkeeping, may not need the same mathematical knowledge as a student entering a pre-engineering program, even though both programs require quantitative skills. College majors have long taken this into account to some degree, making exceptions for students with deficiencies in one area if they show greater strength in another.

For example, a student pursuing a medical records technician certificate or associate degree will benefit from much stronger and more specialized reading and vocabulary skills than a student in an automotive technician program that emphasizes graphical information, schematics, and instructional manuals. Both need a foundational level of literacy, but the precise reading skills each needs vary, and the scores they need to demonstrate achievement on any particular set of measures in order to indicate readiness will likely be different.

Herein lies a significant challenge when implementing the Common Core State Standards or any other set of college and career readiness criteria: Should college and career readiness be defined as one high, consistent level of performance that all students need to reach—knowing that not all students will reach it and that many of those who do not reach it will still be perfectly capable of succeeding in postsecondary education somewhere? Or should readiness be designated in terms of performance ranges that allow students to compensate for weaknesses in one area with strengths in another, based on the specific types of postsecondary programs to which they aspire? Clearly the manner in which college and career readiness is defined affects the way scores are interpreted and how readiness is put into practice operationally, particularly in terms of remedial course placement.

Each approach has benefits and drawbacks. If the scores designating college and career readiness are set at a uniform level, fewer decisions have to be made about individual students. A glance at a score tells students and teachers who is meeting the readiness standard and who is not. Students know where they need to devote more time and energy to meet the standard. The problem with this approach arises when significant numbers of students fail to reach that score level in one area, particularly if most of them are very close to reaching it. Should these students be deemed not to be college and career ready and in need of remediation? Political pressure, if nothing else, will be strong to find an accommodation for them. This has been the case when high school graduation tests have resulted in many students falling just short of meeting the standard. The most common solution has been simply to lower the required scores or offer alternatives to the state test.

If students are allowed, within a given range, to compensate for a lower score in one area with a higher score in another, then more decisions need to be made about how the strengths and weaknesses of individual students align with their goals. Students' academic aspirations come into play to a greater degree. The feedback students receive is in relation not just to their cut score, but to their postsecondary goals as well. Improving our tracking and advising in these areas will require more and better information about the knowledge and skills students actually need to succeed in specific postsecondary programs of study.

The compensatory model can also be problematic for students who have no sense of what their future might be and therefore cannot connect their scores with any postsecondary program. This is a major challenge that schools should be addressing by having students explore and broaden their vision of the postsecondary and career options open to them. The only way to avoid having students aspire to less challenging futures is to get them motivated about pursuing options that require greater educational attainment. Even with such experiences, not all students will be able to articulate a goal. For these students, a conjunctive set of requirements may help them keep all of their options open. The conjunctive approach makes sense here because it prepares students better for the full range of general education courses in multiple subject areas.

One danger of a purely compensatory approach without specifying a foundational level that all students must meet in all subject areas is that some schools may be tempted to track students with lower scores in, say, math into career options requiring less math without necessarily challenging students to strive first to improve their math performance. Regardless of whether scoring is conjunctive or compensatory, all students should have the opportunity to reach all of the Common Core State Standards.

If the goal is to ensure that as many students as possible have the best opportunity to succeed in postsecondary education, it may be necessary to use elements of both conjunctive and compensatory models depending on student interests and aspirations. Doing so will keep the focus on what students can conceivably do, not only on what they cannot do. Readiness will be a function of knowledge and skill at a foundational level and in relation to specific postsecondary goals, interests, and aspirations.

## Conclusions

### Concluding Thoughts from Luisa Sanchez-Nilsen

The process of becoming an effective reader and writer is a symbiotic process with a relationship to behaviors in a child's development. The process encompasses communities, schools, home, early education and care settings. Empowering learning for all will help us teach as well

as learn with our students and to encourage creative thinking (Dewey, 1916). In closing, content standards describe the knowledge and skills learners will need to know and be able to exercise at the end of the each school year. Each of the standards describes a series of sub-skills that build upon the next learning skill, in order for a child to be prepared and ready for the beginning of each grade, which is typically tied to an age band. It is my belief that one standard is not more important than the next. Within each standard are a series of skills or learning progressions that are needed to build a pathway between grade bands. Standards establish clear and consistent guidelines for every student, to ensure students are prepared for a career or college. The standards also provide a way for teachers to measure student progress throughout the year. Consistent standards across the district provide teachers, parents, and students with a set of clear expectations, promoting equity and access. Importantly, the standards promote an integrated approach that ensures all content areas are responsible for instructional development.

The Common Core State Standards (CCSS) are designed to:

- ensure all students and teachers are held to consistent, high expectations;
- ensure students graduate with the skills to make them competitive on a national and international level; and,
- provide clear and focused guideposts for all students, families, and teachers.

### **My Personal Mission Statement: David Conley**

Making more students capable of succeeding in college and careers is no longer an option; it is a necessity. My goal has been to discover what students need to do to succeed and what educators need to do to make this happen. The startling finding of my research is that students can learn or acquire all the knowledge, skills, dispositions, and abilities needed to succeed in college, careers, and life. Rather than the potential for lifelong success being limited to a subset of students, it turns out that schools can equip essentially all students with the tools to achieve such success. My mission has been to spread this message, to build the tools to help schools achieve the goal of all students being college and career ready, and to provide models that let educators develop new ways of teaching that permit all students to succeed.<sup>1</sup>

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*Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects*. Retrieved from

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*Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects: Appendix A*. Retrieved from

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### **Additional Common Core Web Resources**

*Achieve the Core.* This site is assembled by Student Achievement Partners to provide free, high-quality resources to educators now doing the hard work of implementing these higher standards. Retrieved from <http://achievethecore.org>

*Illustrative Mathematics.* Illustrative Mathematics provides guidance to states, assessment consortia, testing companies, and curriculum developers by illustrating the range and types of mathematical work that students experience in a faithful implementation of the Common Core State Standards, and by publishing other tools that support implementation of the standards. Retrieved from <https://www.illustrativemathematics.org/>

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American Institutes for Research. Center on Response to Intervention website. Includes the *Essential Components of RTI*. Retrieved from <http://www.rti4success.org/essential-components-rti>

Center for Educational Leadership, University of Washington. *5 Dimensions of Teaching and Learning*. Retrieved from <http://www.k-12leadership.org/5-dimensions-of-teaching-and-learning>

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### **Video Resources**

Council of Great City Schools. *From the Page to the Classroom: Implementing the Common Core State Standards – English Language Arts and Literacy* (51:49). Retrieved from <http://vimeo.com/44521437>

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### **For Parents and Caregivers**

Washington State Department of Early Learning. *Washington State Department of Early Learning Guidelines*. This is a resource for understanding how young children grow and develop and what parents, early learning educators, and caregivers can do to support that growth and learning. Retrieved from <http://www.del.wa.gov/development/guidelines/>

Washington State Department of Early Learning. *Love. Talk. Play*. Provides ideas for how to love, talk, and play as a part of everyday activities with children. In English and Spanish. Retrieved from <http://lovetalkplay.org/>

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### **Brain Research**

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### **System Resources**

Department of Early Learning, Washington State. Early Learning Plan. Retrieved from <http://www.del.wa.gov/publications/elac-qris/docs/ELP.pdf>

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## Endnotes

<sup>1</sup> Sections of this chapter have been excerpted and adapted from the following source:

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<sup>2</sup> Pellegrino, J., and M. Hilton, Eds. (2012). *Education for Life and Work: Developing Transferable Knowledge and Skills in the Twenty-first Century*. Washington, D.C., National Academy Press.