

## Collaborative Curriculum Design: Future-Focused Teaching, Leading, and Learning

By Connie Kamm, Ed.D.

### The Context for Change Addressed Within the CCD Units

The current period in history is being labeled as the Exponential Age, a time when change is occurring so rapidly that it is difficult for individuals and organizations to navigate effectively or find their equilibrium. John Seeley Brown, the former Chief Scientist of Xerox Corporation and a current Visiting Scholar at the University of Southern California, explains that the Exponential Age is characterized by a shift from an S-curve world to a curve of continuous change. In the S-curve world of the past, broad change occurred followed by 60 to 80 years of relative stability where social and institutional practices had a chance to catch up, to stabilize. Growing up in this world according to Brown allowed young people to set a course of action, like a sailboat moving toward a desired destination. The S-curve world has given way to a zig-zag fraught by 12 to 18 month cycles of change occurring one after another, keeping institutional and personal challenges in flux. Brown points out that growing up and functioning in this era is like navigating roiling rapids in a kayak. It is essential to learn how to accurately read the context and flows and respond quickly and effectively to what is below the surface.

This Exponential Age of rapid, unrelenting change is due to developments in the fourth phase of the industrial revolution, cyber-physical systems. According to the members of the World Economic Forum, the industrial revolution is not a thing of the past. Rather, it has morphed into new iterations, new developments. Phase one of the industrial revolution began in the 1780s with steam and mechanical production equipment. Approximately 100 years later, in the 1870s, phase two introduced electricity and mass production with a division of labor. Again, about 100 years later in the 1970s, phase three added electronics, automated production, and Internet technology. Today, only a little more than four decades later, we find ourselves steeped in phase 4, a cyber-physical world of, artificial intelligence, robotics, 3D printing , synthetic biology, gene editing, and digital medicine. The National Science Foundation defines cyber-physical systems (CPS) as engineered systems that are built from the seamless integration of computational algorithms and physical components. They point out that



CPS technology will transform the way people interact with engineered systems -- just as the Internet has transformed the way people interact with information. New smart CPS will drive innovation and competition in sectors such as agriculture, energy, transportation, building design and automation, healthcare, and manufacturing (Cyber-Physical Systems (CPS), 2017).

A shift in available jobs is one of the ramifications of our current digital revolution. According to a study done by Oxford University, there will be a digital solution for 47% of current jobs in the US within the next 30 years. We are already seeing this shift. Consider the following examples:

- Kodak: In 1997 Kodak was worth \$30 billion and employed over 145,000 people. Because of digital cameras, by 2013, Kodak was worth nothing and employed no one.
- Border Books: Nine years ago, Borders Books had more than 1,000 stores & over 35,000 employees. With the growth of Kindles and online Amazon ordering, bookstore purchases have declined. Four years ago, Borders Books liquidated.
- Airbnb: Ten years ago, Airbnb did not exist. With easy access to multiple properties across the Internet, Airbnb will serve more travelers than the largest hotel chain in the world by next year, yet it will only employ 1,600 people.

These labor market challenges are only going to be further exacerbated by the continued development of cyber-physical systems.

In addition to a loss of jobs in this Exponential Age, this fluctuating workplace also demands that workers develop flexible skills for the changes that are occurring at warp speed. Consider the following observations from Dr. Claudia Goldin and Dr. Lawrence F. Katz (2007) from Harvard's Department of Economics. These scholars point out that technological change is the engine of economic growth that creates winners and losers and can sometimes have adverse distributional consequences that may create social tension. In a working paper for the National Bureau for Economic Research, Goldin and Katz explain:

If workers have flexible skills and if the educational infrastructure expands sufficiently, then the supply of skills will increase as demand increases for them. Growth and the premium to skill will be balanced and the race between technology and education will not be won by either side and prosperity will be widely shared (p. 26).

But what are these skills and how do educators cultivate them in students attending our schools today? Consider the following thoughts. Technology has always impacted the economy and economy impacts education. When educators recognize the demands of operating in this world of cyber-physical systems, it is clear that students can no longer be educated under a teach,

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teach, teach, test, grade, move-on mentality of our current socially efficient assembly line approach to education. In this misguided, mass production model, the teacher is the sole repository of knowledge and textbooks are the primary resource for learning. The skills required for the future, to be flexible, thriving learners, are not being stimulated. This static model needs to be transformed into a more dynamic dialogue of learning.

The goal of future-focused schools is to develop students who are leaders of their own learning and educators who are activators of learning. This goal is achievable if educators concentrate on cultivating the following skills and qualities in both students and themselves:

- Thinking Dynamically: Curiosity, creativity, innovation, and critical thinking;
- Knowing Oneself: Formative learning, mindfulness, brain awareness, growth mindset;
- Caring About Others: Cultural awareness and empathy for others;
- Engaging With Others: Collaboration, social skills, and emotional intelligence.

Through high interest, **multidisciplinary problem/solution-based** units of study, a **formative methodology**, and **research-based learning strategies**, educators today can stimulate students to cultivate the qualities and flexible skills needed to excel as they meet future demands. The following section on Collaborative Curriculum Design (CCD) provides more information about these dynamic units of study.

## **Collaborative Curriculum Design**

The CCD model is comprised of multidisciplinary, problem/solution-based units that flow into one another through carefully planned learning progressions that guide learners to higher levels

of rigor and sophisticated thought. Each unit of study within the CCD model is anchored on a cluster of interdisciplinary standards or learning goals. The units are then developed following a structure of sequences that proceed logically to build a deeper understanding of a specific topic or problem while stimulating creative and critical thinking (see figure 1):

• Sequence One challenges students to

#### Figure 1: A CCD Diagram





acquire knowledge to deeply understand a problem, topic, and/or source (anchor text).

- Sequence Two concentrates on students independently and collaboratively gaining a deeper understanding of the problem or topic being examined, often through additional research, analogous thinking, and/or parallel application.
- Sequence Three challenges students to independently and collaboratively determine a solution or multiple solutions to a problem introduced through the unit.
- The Learning Showcase provides students an opportunity to present their problem and solution to an audience either live or virtually.

One pivotal aspect of the CCD model is customization. Teachers in a school or district create each unit with the children from their community in mind. It is this process of teachers working together in a district combined with the multidisciplinary, problem/solution design that makes this model so powerful.

The CCD units are anchored on a cluster of multidisciplinary standards and include an array of formative and summative assessments. Throughout each sequence there are multiple pieces of evidence that teachers and students assess for standards mastery. There are also pre-and post-unit assessments aligned with the standards identified for the unit. In addition to a variety of standards-based assessments, each sequence (3 per unit) includes formative learning processes; extended reading, writing and speaking experiences; and collaboration opportunities.

Through the progressions in these rigorous, future-focused units, students are stimulated to engage in the following actions:

- Research information and interpret data.
- Think independently and reflect on learning.
- Collaborate with peers and community members, demonstrating a strong work ethic.
- Exhibit curiosity, generating additional questions throughout each sequence.
- Sharpen complex, critical thinking skills.
- Draw from multiple disciplines to gain a wider perspective of a problem and develop fresh approaches to possible solutions.
- Engage in authentic learning experiences that replicate real-world tasks.
- Explore cross-cultural perspectives.
- Develop and present a variety of creative and innovative solutions.



• Showcase learning (problems and possible solutions) to an authentic audience.

Consider the following guidelines for the development of unit sequences in Table 1:

#### Table 1: Elements of an Exemplary Sequence Within a Problem/Solution-Based Unit

Essential	Elements of an Exemplary					
Unit	Problem/Solution-Based Sequence					
component	The sequences proceed logically to build a deeper understanding of the topic/problem while					
	developing the skills and concepts in the identified standards:					
Structure of	<ul> <li>Sequence One focuses on acquiring knowledge to deeply understand a problem, topic,</li> <li>and (or course (or chart tout))</li> </ul>					
Unit	• Sequence Two concentrates on students gaining a deeper understanding of the problem or					
<b>O</b> and	topic being examined, often through additional research and/or independent application.					
	<ul> <li>Sequence Three involves determining and examining a solution.</li> </ul>					
	• Sequences begin with <b>questions</b> that engage the learner in continuous inquiry and discovery.					
	• The Formative Evidence of Student Learning at the end of each sequence is clearly aligned with the right of the converse and the standards that have been identified for the unit					
	<ul> <li>The <b>Showcase</b> logically follows the sequences providing an opportunity for students in small</li> </ul>					
	groups or individually to present their work to people beyond their classroom as they explain					
	their inquiry, share their knowledge about the problem they explored, and suggest possible					
	solutions.					
	• The sequences are carefully designed to stimulate students to <b>identify problems, gather 8</b>					
	interpret data, and develop and present a variety of authentic solutions throughout the unit.					
	• The sequences require students to <b>research more information</b> for understanding a problem than					
Open-Ended	is initially given.					
Problems	• The sequences generate interest, causing students to <b>ask additional questions</b> .					
	<ul> <li>The sequences require students to think independently as well as to collaborate with their peers.</li> <li>The sequences provide authentic learning experiences ("real world") that replicate real world</li> </ul>					
	tasks.					
	The sequences are designed to stimulate students to develop the following qualities and skills:					
Additional	<ul> <li>Thinking Dynamically: Curiosity, creativity, innovation, and critical thinking;</li> </ul>					
of Future-	• Knowing Oneself: Formative learning, mindfulness, brain awareness, growth mindset;					
Focused	Caring About Others: Cultural awareness and empathy for others;					
Leaning	• Engaging with Others: Collaboration, social skills, and emotional intelligence.					

These guidelines are applied to each of the three sequences as teachers build the units. Sequence 1 lays the foundation for sequence 2, which is brought to an authentic application in solving a real-word problem in sequence 3. Consider the example in Table 2 from a team of 8<sup>th</sup> grade social studies teachers.



Table 2: Eight	h Grade	Example	of Unit	<b>Overview:</b>
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Overview of Learning Sequences in a Sample Social Studies Unit on Revolution				
<u>Sequence 1</u> Students Examine the Problem/Topic, Gain Knowledge	Sequence 2 Students Independently Demonstrate a Deeper Understanding Through Research or Analogous Thinking	Sequence 3 Students Determine Solutions to an Authentic Problem and Design a Showcase Summarizing the Problem & Solution	Learning Showcase Students Present the Problem & Solution to an Audience	
Sequence 1 provides students the opportunity to explore the concepts being addressed in the unit using skills indicated in the standards. Through reading, listening, examining, discussing, and writing, students prepare for Sequence 2. To complete this section, include a sequence question(s) and a brief description.	Sequence 2 affords the students the opportunity to use the knowledge that they acquired in Sequence 1 to go deeper with their learning. In Sequence 2, students have to apply what they have learned and engage in deeper research and more strategic, often analogous, thinking. The learning opportunities in Sequence 2 prepare students for extended thinking in	Sequence 3 challenges students to examine solutions to the topics/ problem examined in Sequences 1 & 2. This Sequence connects the concepts and skills in the standards to authentic, or real-world issues and occurrences, and asks students to think critically and creatively as problem solvers.	At the end of the unit, students demonstrate what they have learned as they present the problem and a solution through a performance and/or product to an audience beyond their classroom.	
Social Studies Example:	Sequence 3. Social Studies Example:	Social Studies Example:	Social Studies Example:	
Students are presented with the following question: "How did a group of colonies organize themselves successfully in revolution against the most powerful nation in the Western world before modern communication?" They break into small research teams to seek an answer to the question using provided materials and sites/documents they research from the Internet. Students present their thoughts in panels and through a Socratic seminar. They support their thoughts with primary and secondary source evidence.	Students are presented with the following questions: What other locations in the world were experiencing revolution within 50 years of the American Revolution? How were these revolutions similar and dissimilar to the Am. Revolution? What are common causes of revolution? Students work independently or in small research teams to select and investigate another revolution, drawing parallels to the Am. Rev. Collectively, students seek to determine common causes of revolution.	Students are presented with the following question: "What contemporary potential revolution is brewing somewhere in the world and how can solutions be reached before extensive loss of life occurs?" Reviewing what they have learned about revolutions and their common causes, students research a current potential revolution. They will investigate solutions that can deter revolutions and present their suggestions for deterring the specific revolution on which they are focusing, using a digital presentation tool.	Students create a website about revolution and resolution. Their site features some of the common causes of revolution throughout history as well as solutions to potential revolutions facing people in today's world. They will include blogs on the website inviting social studies classes to engage in discussion.	



Table 2 Continued: Formative Evidence for this Sequence				
Formative Evidence of Student Learning	Formative Evidence of Student Learning	Formative Evidence of Student Learning	Formative Evidence of Student Learning	
Students individually keep response journals logging their notes and thoughts. After multiple opportunities for discussion, students each complete an argumentative essay stating a claim in response to the question for this sequence: "How did a group of colonies organize themselves successfully in revolution against the most powerful nation in the Western world before modern communication?" They support their claim with credible evidence. Student will engage in peer editing to support one another's work.	Students continue recording their notes and thoughts in their response journals. They complete a graphic organizer drawing parallels between revolutions. The organizer culminates in an informational summary about commonalities found across revolutions. Student will engage in peer editing to support one another's work.	Students continue recording their notes and thoughts in their response notebooks. They will present and publish their suggested solutions to a potential contemporary revolution. The publication may be on a Web-based product using a digital tool of their choice.	Students each participate in publishing information about the region of the world they selected for Sequence 3. In addition each student will participate in creating and responding to blogs generated by their understanding of causes and solutions to revolution.	

## Problem/Solution-Based Learning

Problem/solution-based learning has a solid philosophical and epistemological foundation going back thirty plus years (Duffy & Cunningham, 1996, Savery & Duffy, 1995; Torp & Sage, 2002). This approach to learning, however, is not common in schools today. As a result of the No Child Left Behind Act, educators over the past sixteen years are more likely to follow a textbook driven curriculum that prepares students for standardized testing and supports instructional approaches that teach to the test. Memorization and regurgitation, based on what the textbook and teacher present, is more the order. Time is segmented into short blocks and there is rarely an opportunity for students to immerse themselves in determining an authentic solution to an engaging problem.

In study after study, problem-based learning yields higher results in terms of student engagement, critical thinking, creativity, academic achievement, and longer retention of concepts and skills. Problem-based learning is a student-centered approach with the intent of



stimulating students to cultivate their creative thinking and their ability to transfer ideas across different settings and situations. Problem-based learning challenges students to integrate knowledge across disciplines. In addition, problem-based learning stimulates students to

- Engage in diverse modes of thinking from big picture to minute detail,
- Consider others' ideas,
- Generate new inquiries and new ideas.

In *Problem-Based Learning and Creativity*, Oon-Seng Tan, the Head of Psychological Studies at the National Institute of Education, Nanyang Technological University, Singapore, notes, "Since time immemorial, the intelligence of individuals has been gauged from the questions they ask and the problems they are able to solve" (p. 5).

Paul Kline (1991), a professor of psychology and author of *Intelligence, The Psychometric View* also agrees with the importance of problem solving. He articulated the following astute observation: "the intelligent person is far more easily spotted from his response to new problems not his knowledge of old solutions" (p. 31). In the CCD units, students are actively involved in problem/solution thinking that includes the following essential characteristics:

- Students are given responsibility for their learning. Through choice of problems and the determination of possible solutions, students are required to seek sources and think in fresh or unique ways. Teachers activate student learning.
- The problems are ill-structured. There isn't a tidy answer.
- Learning is integrated from a wide of disciplines, just as in the real world.
- The problems are authentic, real world and collaboration is essential.
- Self-directed research is required where students seek answers that they are not spoonfed by the teacher.
- Self and peer assessment occur throughout the problem/solution scenario.
- Problem-based learning is the pedagogical base in the curriculum.

## Formative Learning Interwoven with the Problem/Solution-Based CCD Units of Study

In addition to a multidisciplinary, problem solution emphasis, the CCD units also embrace strong pedagogy. One specific area of focus includes a deeply embedded formative process within the teaching and learning progression in each of the three unit sequences.



There has been a great deal of study on the power of the formative process to transform teaching and learning. From even before Black and Wiliam's (1998) pivotal meta-analysis, "Assessment and Classroom Learning," educators have been extolling the virtue of formative assessment, oftentimes without grappling with the cycle of learning intrinsic to this process. Instead, educators have focused on the word *assessment*, which often translates to a test or product, something that teachers use for evaluative purposes. Product, however, is only one of the components. Inherent in formative assessment is the process of responsive teaching, an approach that puts evidence of student learning and the needs of the learner at the heart of decisions about which instructional strategy to implement. It is during this formative process that rich classroom practices are enhanced and deep learning dialogues between students and teachers occur.

The formative process includes the following components: student-generated criteria, analysis of specific learning progressions, evidence of student learning, focused teacher feedback, student developed goals and action plans, peer-to-peer feedback and teaching, meta-cognitive processing, and multiple opportunities for success.

In the CCD units of study the components of the formative process are woven into the learning progressions contained in each sequence. Teachers are guided to embed the components of formative learning (see Figure 2) in their units by answering the following questions and implementing their answers as classroom actions:

- How will students be involved in generating the learning criteria?
- How will both students and teachers determine the appropriate learning progression toward mastery of specific concepts and skills?
- Which assessment products will provide students and teachers with evidence of student learning?



#### Figure 2: Formative Learning



- How and when will teachers provide feedback to students? How will the students use this feedback to revise their work? How will teachers use the feedback to revise their instruction?
- How will students shape and monitor their learning goals and establish their own action plans? How will teachers and students use these action plans?
- How are opportunities for peer feedback provided? What guidelines and documents will be used to support peer feedback?
- What opportunities will students be given to **teach one another**?
- How and when will students engage in a metacognitive process?
- How will students be provided with **multiple opportunities for success**?

The formative process engages both teachers and students in a cycle of reflection and continuous learning. Educators are guided to respond to learners' needs and students are empowered as leaders of their own learning, knowing where they are going, how they are doing, and what their next steps in learning look like. *In Visible Learning*, John Hattie (2009) observes, "The biggest effects on student learning occur when teachers become learners of their own teaching, and when students become their own teachers" (p.22). This communication between teachers and students is perhaps the most clear in the formative reflection templates included with each sequence (See samples in Tables 3 and 4).

My Learning Goal and Action Plan				
Student's Name				
What is your learning goal?				
Why have you selected this goal?	Why have you selected this goal?			
How will you reach your goal?				
What action steps will you take?	What help will you need? Where will you find this help?	What date will you set for the completion of this step?	How will you know if you are successful?	
How will you celebrate the accomplishment of your goal?				

Table 3: Middle School Metacognitive Reflection and Goal Setting Action Plan



 Table 4: Third Grade Metacognitive Reflection and Goal Setting Action Plan Created by Allison

 Daniels, 3<sup>rd</sup> Grade Teacher

Date:	Name:
What did you like most about your writing?	When I read my writing, I liked how I
What could you improve on in writing future stories or paragraphs?	In my writing, I would like to improve
What action steps will you take?	First I will Next, I will
What help will you need? Where will you find this help?	I will need help with I canto find this help.
What date will you set for the completion of this step?	I will complete these improvements by
How will you know if you are successful?	I will know I am successful when
How will you celebrate your success?	I will celebrate my success by

The following page (See Figure 3) summarizes the formative process that is embraced within each CCD unit. Although multidisciplinary, problem/solution-based units of study are more engaging and relevant and yield deeper student learning than traditional units of study, the addition of the formative learning process within the CCD units doubly ensures greater learning success for students.

#### **Figure 3: The Formative Learning Process**

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The formative assessment process includes the following components that involve both educators and students in a cycle of learning:

- Educators identify and unpack standards and establish a learning progression as well as models of what the final learning outcomes look like.
- Educators pre-assess their students to determine each student's level of mastery of concepts and skills in relation to the determined standards.
- Students and educators collaboratively generate specific success criteria that are in alignment with the standards.
- Students determine their personal learning goals, and through a series of learning experiences, they demonstrate their mastery of concepts and skills stated in the standards.
- Based on the evidence of student learning, educators give frequent, focused feedback that guides students' learning and builds their confidence as they master new learning.

- Within this learning cycle, educators provide ample opportunities for students to self-assess their progress based on the specific success criteria.
- Students are also provided with the opportunity to peer-assess using the success criteria. Educators provide clear guidelines for peer-assessment, only requiring students to give feedback to one another on criteria that the students are prepared to address.
- To more thoroughly guide student learning, educators give specific and timely feedback throughout the process. In addition, educators employ a variety of researchgrounded instructional practices providing learners with alternate ways to master the concepts and skills identified in the standards.
- Students are given many opportunities to apply the standardsbased success criteria as they revise their work according to the feedback they have received. One major component of formative learning is providing students with multiple opportunities for success.

10. Educators assess student learning in order to determine next steps in the learning cycle.

#### Just Try

Try, Try more. Try one more time. Try it a little differently. Try it again tomorrow. Try and ask for help. Try to find someone who has done it. Try to determine what is working. Just keep trying.

> From the University Teaching Hospital School for Special Needs Students Lusaka, Zambia



## An Emphasis on Literacy in All Content Areas

In addition to a multidisciplinary, problem/solution based structure and the infusion of formative practices included in the CCD units, there is an emphasis on rich literacy practices across all content areas. Each unit contains key strategies for embracing the literacy shifts included in the Common Core State Standards.

In this digitally dominated era, fast communication, easy access to knowledge, and web-enabled global competition abound. An individual's ability to read complex texts and write and communicate clearly, often determines one's success. College and most careers require a high degree of literacy. The <u>Aspen Institute (2012)</u> notes, "The ability to read complex text is the single greatest predictor of success in college." As a result of this emphasis, the development of literacy skills in K-12 education has intensified. The Common Core State Standards support this literacy emphasis with rigorous reading and writing standards across content areas.

The Aspen Institute (2012) also states that while the complexity of texts in college and careers has remained steady, the complexity of texts students are given in elementary and secondary schools has diminished over time. Today's educators are grappling with the higher demands for more literate graduates. Among many strategies for improving literacy skills are the focus on close reading of anchor texts, text sets, and more effective vocabulary development practices. In addition, the inclusion of writing in all subject areas is imperative. The writing process is proven to heighten students' learning by igniting higher cognitive thinking across all academic subjects, even mathematics.

Within each multidisciplinary sequence in the CCD units of study there is a suggested teaching and learning progression that includes rich literacy practices. Multiple best practice tables in literacy have been developed to guide curriculum writers in the inclusion of effective reading comprehension and writing strategies (See Appendix 1). Consider the example of rich literacy practices included within an 8<sup>th</sup> grade social studies sequence demonstrated in Table 5. In this sequence, students are examining multiple examples of migration/immigration/forced migration throughout US History. They will review documents from a variety of genre to support their learning. They will then examine the ramifications of these movements. The following literacy standards are being addresses in this sequence:



- RH.6-8.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge opinions. (BT Level 4 Analyze; DOK 3 Strategic Thinking/Reasoning)
- **RH.6-8.8** Distinguish among fact, opinion, and reasoned judgment in a text. (BT Level 4, Analyze, DOK 4, Extended Thinking)
- **WHST.8.2** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

# Table 5: Suggested Teaching and Learning Progression Within Sequence 1 in an 8<sup>th</sup> Grade Unit (Approximately 7 days in a six week unit).

Section	Details		
Preparing for Learning	<ul> <li>Write focus questions on board: "Why do people move? What are the ramifications of this movement?"</li> <li>Class survey of moves: "Four corners":         <ul> <li>Students move into four corners of classroom according to following categories:</li> <li>Round #1: Never moved or moved within Sonoma County/moved within CA/moved within U.S/ moved out of U.S.</li> <li>Round #2: Never moved/moved only once/moved twice/moved 3+ times.</li> <li>Round #3: Don't remember moving/remember 1 move well /remember 2 moves well/remember 3+ moves well.</li> </ul> </li> </ul>		
	Chart personal moves:		
	<ul> <li>Chart personal moves:         <ul> <li>Students create and complete a chart in their notebooks that includes the following:                 <ul> <li>Title: "My moves"</li> <li>Chart categories:</li></ul></li></ul></li></ul>		
	<ul> <li>Teachers models with their own examples of moving and include details from each category before students begin charting.</li> <li>If student has never moved, s/he can complete chart for move from elementary to middle school.</li> <li>Note: Children of divorced parents sometimes choose</li> </ul>		
	to chart move from one parent's home to another.		



Section	Details		
	Personal move Quick Write:		
	• Students put a star next to the move they would most like to		
	write about from their chart (because they remember it the		
	most, had the strongest feelings about it, etc.).		
	<ul> <li>Students number back-up choices for writing (should have at least one back-up choice)</li> </ul>		
	$\sim$ Students complete a timed write (about 6-8 mins) about		
	chosen move. Include details from chart as well as additional		
	thoughts and feelings. Do not stop writing for entire timed		
	writing period; if students finish writing about first move, begin		
	writing about back-up choices.		
	<ul> <li>Have students share one of their stories with their partners;</li> </ul>		
	partners should listen for details from chart.		
	• Whole class reflection: Ask for a few volunteers to share stories.		
	Ask for examples of details from partner stories that fit into		
	chart categories.		
	Collect stories and review for levels of mastery on identified     writing standards		
	writing standards.		
Literary	Read "The Circuit" (Francisco Jimenez) or "Moving Around" (part of		
Connection	story collection entitled Small Faces by Gary Soto).		
	<ul> <li>After reading, students should write a response about what the</li> </ul>		
	story made them think, feel, or wonder.		
	• Discuss observations and responses to the story with a partner.		
	• Whole class discussion: Identify examples from the stories of		
	character's reasons for moving, thoughts & feelings about the		
	move, challenges of the move, and adjustments made as a result of the move.		
	result of the move.		
	Students interview family member from another generation. They may		
Family	choose from the following questions or select questions from the		
Member	following oral history document: <a href="http://www.csus.edu/aas/aas-">http://www.csus.edu/aas/aas-</a>		
Interview/	faculty/sobredo-guide-interview.htm		
Footsteps	• Where did the family member move to and from?		
	• What were some of the <b>reasons</b> for the move?		
	<ul> <li>What were some of the challenges of the move?</li> <li>How did the family member feel about the move?</li> </ul>		
	<ul> <li>How did the family member adjust to the move? What actions</li> </ul>		
	did s/he take?		
	<ul> <li>Share completed interview in small groups.</li> </ul>		
	RVMS' Footsteps assignment expands the Family		
	Member Interview/research family's initial		
	involvement in US History		
	Footsteps Rubric		
	<ul> <li><u>Submit the written interview.</u></li> </ul>		
Migration	Define types of migration: forced migration and voluntary migration		
Awareness	• Watch overview of human migration: Animated Man of Human		
	Migration		
	<ul> <li>Complete anticipation guide about types of migration</li> </ul>		
	• Teacher resource: <u>"Migration: Forced Migration, Reluctant</u>		
	Migration and Voluntary Migration"		
	<ul> <li>Record key terms, definitions, and examples/visual</li> </ul>		



Section	Details		
	representations		
	• Videos		
	<ul> <li>Animated Map of Human Migration</li> </ul>		
	• The Immigration History of the United States		
Content	<ul> <li>Teachers will model how to get information on each of the groups of</li> </ul>		
Delivery	movers.		
	<ul> <li>Students are given a <u>Movers Graphic Organizer</u>.</li> </ul>		
	<ul> <li>Students will be provided resources to help research the groups to</li> </ul>		
	study.		
	<ul> <li>Possible Resources:</li> </ul>		
	<ul> <li>Text books.</li> </ul>		
	<ul> <li>See links to resources.</li> </ul>		
	<ul> <li>Students will fill in the following information:</li> </ul>		
	<ul> <li>Background information on the groups moving.</li> </ul>		
	<ul> <li>Push and Pull Factors.</li> </ul>		
	<ul> <li>Challenges to group moving.</li> </ul>		
	<ul> <li>Impact of the interaction.</li> </ul>		
	• For remainder of content, students will be in <b>expert jigsaw groups</b> .		
Writing	Write two entries; one that reflects migration and one that reflects		
Entries	immigration		
	<ul> <li>The entries should address: "Who is moving?" "Why (make</li> </ul>		
	sure this distinguishes what type of move)?" "How do you		
	know?" "How were they received after their move?"		
	<ul> <li>In mixed groups, students will share their entries. After they</li> </ul>		
	have shared, as a group, they will develop a chart/list of		
	common themes about immigration and migration.		
	<ul> <li>Each group will share out the commonalities they found</li> </ul>		
	amongst immigrating and migrating groups		
	<ul> <li>Collect student entries and assess for standards mastery.</li> </ul>		



## Towards Personalized Learning Through Collaborative Curriculum Design

Personalized Learning		
In personalized learning, the role of the student is to direct his or her own learning.	Through personalized learning, instruction is paced to the <b>learning needs</b> , tailored	
<b>Digital tools</b> are an important part of personalized learning enrich and extend learning.	and responsive to the <b>specific</b> interests of different learners."	
Teachers <b>design instruction</b> that is not only rigorous but allows for flexibility, adaptability, critical thinking, and metacognitive processing as is present in problem-based learning	gn instruction y rigorous but ibility, critical thinking, hitive processing n problem-based In classrooms where personalized learning is emphasized, teachers and students work together to help students meet their learning goals, and there is a healthy learning environment where a strong sense of self and community is present.	

Figure 4: Personalized Learning Diagram

The goal of personalized learning is to increase students' involvement and engagement in their own education while developing skills that are essential to success in any adult setting (See Figure 6). In order to do so, teachers provide the flexibility and support necessary for students to master the highest possible standards by tailoring students' learning experiences according to their needs and their strengths and by allowing the students a voice and a choice in what they learn.

Personalized learning is also digitally based and asks students to be directly involved in the design of their own learning process with the freedom to create their own learning goals and employ self-reflection as they work to meet those goals. Often, this approach requires flexibility in allowing students to take their learning beyond the confines of what has been the traditional classroom. Personalized learning is forward thinking, preparing students with the skills and personal qualities that will lead to their future success in this complex digital age.

The units of study developed under the CCD model are moving learners toward personalized learning. Within the three unit sequences students are afforded choices in the topics they



examine, the solutions they reach, and the methods of presentation they choose (often selecting from an array of digital tools). In addition, through the formative process, students are activated as leaders of their own learning, determining what their next steps in learning need to be. As teachers progress in their unit development and in their ability to be true activators of learning, the units will reflect greater receptivity to the needs, preferences, and interests of learners.

In Preparing Teachers for a Changing World: What Teachers Should Learn and be Able to Do, Linda Darling-Hammond and Frank Adamson (2010) paint a picture of needed changes to education stating that "schools must teach disciplinary knowledge in ways that also help students learn how to learn, so that they can use knowledge in new situations and manage the demands of changing information, technologies, jobs, and social conditions" (Darling-Hammond, 2014). The Collaborative Curriculum Design Model effectively guides educators and students in the direction of much-needed change in teaching and learning.



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## Appendix 1

The following tables contain literature reviews in a bullet-point format. They focus on multiple topics that concern educators daily. If you have questions about any of the tables and the programs that support them, please contact <u>info@kammsolutions.com</u>.

Guidelines for Future-Focused Practices			
Description	Table URL		
<b>Personalized Learning:</b> The goal of personalized learning is to increase students' involvement and engagement in their own education while developing skills that are essential to success in any adult setting.	http://kammsolutions.com/wp- content/uploads/2017/07/Guidelin es_Personalized-Learning3.pdf		
<b>Stimulating Creativity:</b> Students who will have the greatest success in the future are those who can connect seemingly unrelated ideas, who recognize patterns in apparent disorder, who make meaning from that which at first appears meaningless, who see the big picture, and who know how to care, nurture and empathize.	http://kammsolutions.com/wp- content/uploads/2017/04/Stimulati ng-Creativity-in-the-Classroom.pdf		
<b>Mindfulness:</b> Research has shown that students as young as seven who regularly practice mindfulness are gradually able to decrease impulsive and reactive behavior by considering their thoughts and emotions carefully and rationally. Mindfulness has proven to increase the working and visual-spatial memory and sustained attention of students. Mindfulness practices have also directly improved student cognition and performance in the classroom as well.	http://kammsolutions.com/wp- content/uploads/2017/04/UsingMi ndfulnessintheClassroom-1-2.pdf		
<b>Providing and Receiving Feedback:</b> Feedback is information about how one is doing in an effort to meet a goal. It is not an evaluation or advice; rather, effective feedback is a dialogue, not one-way communication. Feedback occurs in day-to-day encounters with the intent of reducing the gap between where a person is currently performing and where that person is striving to perform.	http://kammsolutions.com/wp- content/uploads/2017/04/Guidelin es-on-Effective-Feedback.pdf		
<b>Building a Positive School Culture:</b> A positive school culture allows teachers and administrators to engage in high quality relationships with one another, to see their work as meaningful, and to share and actualize a collective future-focused vision for the school. As a result of a positive school culture, students feel safe and understood and have the space to grow in their learning experiences and perform at their optimum levels.	http://kammsolutions.com/wp- content/uploads/2017/07/FinalBuil dingaPositiveSchoolCulture.pdf		
<b>Collaborative Teacher-Based Teams:</b> Teacher-to-teacher collaboration provides professional support for teachers by offering a variety of perspectives, ideas, and strategies to enhance the overall classroom experience for students. Schools that support effective collaborative teacher-based team practices have higher student achievement.	http://kammsolutions.com/wp- content/uploads/2017/04/Final- Guidelines-and-Resources-for- CollaborativeTeams.docx-1-1.pdf		
<b>Problem/Solution-Based Learning:</b> The core of Kamm Solution's Collaborative Curriculum Design Model is multidisciplinary, problem/solution based units of study that challenge students to think creatively and critically.	http://kammsolutions.com/wp- content/uploads/2017/06/Guidelin es-for-Problem-Based- Learning1.pdf		



Guidelines for Literacy Practices		
Description	Table URL	
<b>Effective Reading Practices:</b> In order for students to become more critical consumers of what they read, they need to think and talk about the content, as well as remember and do something meaningful with the information. The practices on this table are not at all an exhaustive list, but they are each effective in helping students become more critical, independent readers.	http://kammsolutions.com/wp- content/uploads/2016/02/Increasin g-Literacy-2_2016.pdf	
Anchor Texts and Text Sets: A text set is a collection of sources about a specific topic, theme, or issue. Text sets are often created around an anchor text. Using anchor texts and text sets help students to go deeper in their knowledge.	http://kammsolutions.com/wp- content/uploads/2015/09/mlAn chor-Text_and_Text_Sets-1-2.pdf	
<b>Vocabulary</b> : Improving students' vocabulary strengthens their reading comprehension and helps them to write and speak more clearly and concisely. The practices in this table are not at all an exhaustive list, but there are some powerful strategies to support students' vocabulary development.	http://kammsolutions.com/wp- content/uploads/2017/04/Guidelin es-for-Effective- Vocabulary_Practices.pdf	
<b>Opinion/Argumentative Writing</b> : Making a thoughtful, substantiated argument is at the core of critical thinking. The CCSS requirements for argumentative and opinion writing recognize the need for critical thought and guide teachers to refine how they teach students to compose strong, supported pieces of writing.	http://kammsolutions.com/wp- content/uploads/2017/09/Guidelin es-for-Opinion-and-Argumentative- Writing.pdf	
Informative/Explanatory Writing: Using language to discuss factual ideas in a logical format is a vital skill used in academic, personal, and professional circles. As a result, students are being expected to write informative and explanatory texts that examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.	http://kammsolutions.com/wp- content/uploads/2017/09/Guide lines-for-Informative-Writing.pdf	
<b>Narrative Writing:</b> A narrative in its most basic form is a story. The act of telling stories is a powerful way for people to reflect, connect, and find meaning. In addition, narrative writing is an excellent means to help students refine their composition skills. Narratives also serve as a powerful transition into other forms of writing.	http://kammsolutions.com/wp- content/uploads/2017/04/Guidelin es-for-Narrative-Writing1.pdf	



Guidelines for General Instructional Practices		
Guidelines for Multidisciplinary Writing		
<b>Preparing for Learning:</b> It is essential to prepare students for learning when a new topic or concept is introduced. There are several simple strategies to use to ensure a higher level of readiness for learning.	http://kammsolutions.com/wp- content/uploads/2017/04/Instructi onalPracticesPreparingforLearningU pdated.pdf	
<b>Learning Through Inquiry:</b> Effective teachers recognize the need to have a classroom where inquiry is a central part of the daily exchange. Both teachers and students can apply the guidelines for effective questioning on this table.	http://kammsolutions.com/wp- content/uploads/2017/04/Instructi onalStrategies_LearningThroughIng uiryupdated1.pdf	
<b>Interactive Techniques:</b> The practices on this table serve a double purpose: they not only allow teachers to quickly assess what students are gleaning from a class session, but they also provide the means for students to learn the material well.	http://kammsolutions.com/wp- content/uploads/2015/09/mlInt eractiveTechniques-1-2.pdf	
<b>Collaborating with Others:</b> Well-structured student-to-student collaboration is an effective practice to not only engage every student in the classroom, but also to enhance each student's comprehension of the material.	http://kammsolutions.com/wp- content/uploads/2017/04/Collabor atingWithOthersupdated.pdf	
<b>Organizing Thinking:</b> Teaching students strategies for finding patterns and relationships, note taking, and reflection will enhance, refine, and clarify what they are learning.	http://kammsolutions.com/wp- content/uploads/2015/09/mlOr ganizing_Your_Thinking-2.pdf	
<b>Digital Tools:</b> Successfully navigating and implementing the myriad of available digital resources designed for classroom teachers is well worth the effort. Digital tools enhance strong instructional methodology. They also engage students and extend learning.	http://kammsolutions.com/wp- content/uploads/2015/09/Guidelin es-for-Using-Digital-Tools-in-the- Classroom.pdfCool Tools for Schools: http://cooltoolsforschools.wikispac es.com/Home	
<b>ELL Go-To Strategies:</b> Note the matrix on page 19, the tables beginning on page 29, and the glossary of strategies beginning on page 66.	http://kammsolutions.com/wp- content/uploads/2015/09/ELL_go- to-strategies.pdf	
<b>Strategies for Teachers to Use with Special Needs Students:</b> This website contains clear explanations and specific strategies that help teachers support learners with special needs.	http://www.strategies4busyteacher s.com/	



Description	Table URL
Writing Across the Curriculum: Writing across the curriculum is anchored on the belief that writing is a primary method of learning in any discipline and should be implemented across all content areas throughout each student's education.	http://kammsolutions.com/wp- content/uploads/2017/04/Writing- Across-the-Curriculum-Nov27- 20161-1.pdf
Writing in Math: When students write in math classes, explaining a concept or how and why they arrived at an answer, remarkable progress in their understanding occurs and mathematical reasoning skills are bolstered.	http://kammsolutions.com/wp- content/uploads/2017/04/Writingt oLearninMath.pdf