1   # Chapter 10

2   # Learning in the 21st Century

Chapter at a Glance

21st Century Skills Defined
   Partnership for 21st Century Skills
   Committee on Defining Deeper Learning and 21st Century Skills
   CCSSO EdSteps Initiative and Asia Society Partnership for
      Global Learning

21st Century Skills and the Standards
   Critical Thinking Skills
   Creativity and Innovation Skills
   Communication and Collaboration Skills
   Global Awareness and Competence
   Technology Skills

Instructional Practices for Developing 21st Century Learning

Equitable Access
   Technology

**Professional Learning and Teacher Support**

Future Directions

Works Cited

3

4   The development of 21st century skills is a critical component of preparing

5   students to achieve the goals outlined in Chapters 1-3 of this framework: Students

6   develop the capacities of literate individuals, become broadly literate, and are ready for

7   college, career, and responsible citizenship. These goals are displayed in the outer ring

8   of Figure 10.1. (See a discussion of the graphic in Chapters 2 and 3.)

9   This chapter defines 21st century skills, describes their integration in ELA/literacy

10   and ELD programs, and presents instructional practices. It concludes with discussions

11   of equitable access, professional learning and teacher support, and future directions.

12   Snapshots of practice are also provided.

13   Figure 10.1. Goals, Themes, and Contexts for Implementation of the CA CCSS for

14   ELA/Literacy and the CA ELD Standards.
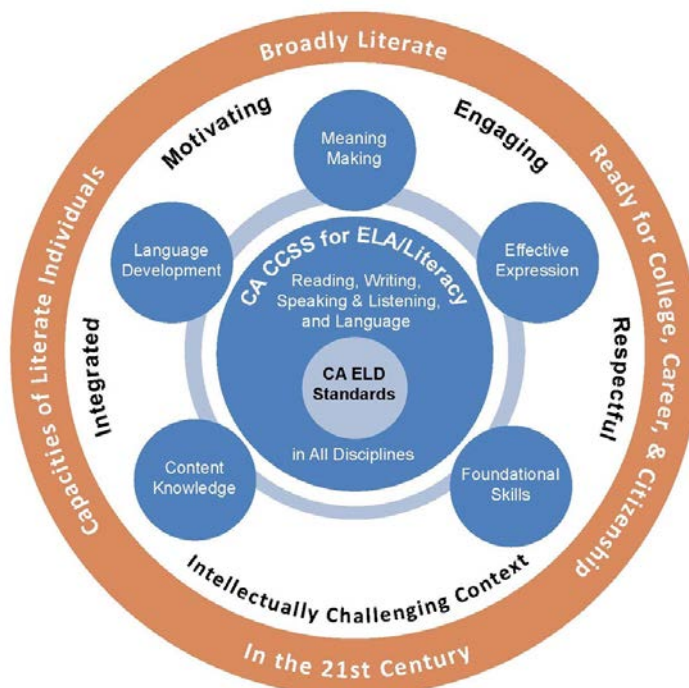
15   **21st Century Skills Defined**

16   All students need to acquire the cognitive as well as social skills and dispositions

17   that will enable them to succeed in the dynamic, fast-paced, and complex world of the

18   21st century. Recognizing the challenges of the decades ahead, various education,

19   business, and government groups identified sets of skills and dispositions deemed

20   critical for the success of individuals in their pursuit of higher education and

21   careers as well as for responsible citizenship—so called "21st century skills." Although

22   several frameworks exist that identify 21st century skills, the *California Framework for*

23   *ELA/ELD K-12* draws on three. The first two—those developed by the Partnership for

24   21st Century and the National Research Council's Committee on Defining Deeper

25   Learning and 21st Century Skills—are comprehensive. They are organized differently,

26   but they have identified many of the same skills. The third—developed by the CCSSO

27   and Asia Society Partnership for Global Learning—focuses on one set of 21st century

28   skills: global competencies.

29

30   **Partnership for 21st Century Skills**

31   The Partnership for 21st Century Skills (P21) is a national organization of

32   educational nonprofits, foundations, and businesses that advocates for 21st century

33   readiness for all students. Formed in 2002, the organization developed a framework for

34   21st century learning that consists of student outcomes and systems of support, the

35   latter of which addresses standards and assessments, curriculum and instruction,

36   professional development, and learning environments. Student outcomes, presented in

37   Figure 10.2, are organized into four categories: 1) core subjects (e.g., English,

38   mathematics, science, social studies) and 21st century themes, 2) life and career skills,

39   3) learning and innovation skills, and 4) information, media, and technology skills. The

40   California Department of Education joined the Partnership in 2013 and is integrating

41   21st century skills into all academic core content areas as well as career and technical

42   education.

43

44   Figure 10.2. Student Outcomes Identified by The Partnership for 21st Century Skills

45   (2011)

Core Subjects and 21st Century Interdisciplinary Themes	Life and Career Skills	Learning and Innovation Skills (The "Four C's")	Information, Media, and Technology Skills
Themes include: • Global awareness • Financial, economic, business, and entrepreneurial literacy • Civic literacy • Health literacy • Environmental literacy	• Flexibility and adaptability • Initiative and self-direction • Social and cross-cultural skills • Productivity and accountability • Leadership and responsibility	• Creativity and innovation • Critical thinking and problem solving • Communication and collaboration	• Information literacy • Media literacy • Information, communications and technology literacy

46

47

48   **Deeper Learning and 21st Century Skills**

49   The Committee on Defining Deeper Learning and 21st Century Skills,

50   commissioned by the National Research Council, was charged with defining "the set of

51   key skills that are referenced by the labels 'deeper learning,' '21st century skills,'

52   'college and career readiness,' 'student centered learning,' 'next generation learning,'

53   'new basic skills,' and 'higher order thinking'" (National Research Council 2012, 1). The

54   committee organized the skills into three broad categories or domains of competence:

55   1) cognitive competencies, including cognitive processes and strategies, knowledge,

56   and creativity; 2) intrapersonal competencies, including intellectual openness, work

57   ethic/conscientiousness, and positive core self-evaluation; and 3) interpersonal

58   competencies, including teamwork and collaboration and leadership. Figure 10.3

59   provides information on these clusters.

60   The Committee on Defining Deeper Learning and 21st Century Skills suggests

61   that deeper learning is essential for developing 21st century skills. Deeper learning is

62   defined as "the process through which an individual becomes capable of taking what

63   was learned in one situation and applying it to new situations (i.e., transfer)" (National

64   Research Council 2012, 5). The committee report states that transferable knowledge is

65   the product of deeper learning and includes both knowledge of content and "knowledge

66   of how, why, and when to apply this [content] knowledge" (6). In other words, students

67   need to learn 21st century skills and learn how to apply them now and in the future.

68   Likewise, educators need to learn how to encourage their students' development and

69   strategic use of such skills.

70

71   Figure 10.3. Competencies Identified by the Committee on Defining Deeper Learning

72   and 21st Century Skills (2012)

Cognitive Competencies	Intrapersonal Competencies	Interpersonal Competencies
Cognitive Processes and Strategies Critical thinking, problem solving, analysis, reasoning, argumentation, interpretation, decision making, adaptive learning, executive function **Knowledge** Information literacy (research using evidence and recognizing bias in sources); information and communications technology literacy; oral and written communication; active listening[1] **Creativity** Creativity, innovation	**Intellectual Openness** Flexibility, adaptability, artistic and cultural appreciation, personal and social responsibility (including cultural awareness and competence), appreciation for diversity, continuous learning, intellectual interest and curiosity **Work Ethic/Conscientiousness** Initiative, self-direction, responsibility, perseverance, productivity, grit, Type 1 self-regulation (metacognitive skills, including forethought, performance, and self-reflection), professionalism/ethics, integrity, citizenship, career orientation **Positive Core Self-Evaluation** Type 2 self-regulation (self-monitoring, self-evaluation, self-reinforcement) physical and psychological health	**Teamwork and Collaboration** Communication, collaboration, teamwork, cooperation, coordination, interpersonal skills, empathy/perspective taking, trust, service orientation, conflict resolution, negotiation **Leadership** Leadership, responsibility, assertive communication, self-presentation, social influence with others

73

74   **CCSSO EdSteps Initiative and Asia Society Partnership for Global Learning**

75   Both the Partnership for 21st Century Learning and the Committee on Defining

76   Deeper Learning and 21st Century Skills include skills related to global or cultural

77   awareness, appreciation of diversity, and collaboration with others. Along these lines,

78   recognizing that global competence is crucial for living and working in the global era of

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[1] As noted throughout this framework, speaking and listening should be broadly interpreted to include signing and viewing for Deaf and hard of hearing students whose primary lnaguage is American Sign Language (ASL).

79   the 21st century, the Council for Chief State School Officers (CCSSO) in collaboration

80   with the Asia Society Partnership for Global Learning commissioned a task force to

81   identify the capacities of a globally competent student. Global competence is defined as

82   "the capacity and disposition to understand and act on issues of global significance"

83   (Mansilla and Jackson 2011, xiii). The task force determined that students who are

84   globally competent can perform the following:

85   • Investigate the world beyond their immediate environment, framing significant

86   problems and conducting well-crafted and age-appropriate research

87   • Recognize perspectives, others' and their own, articulating and explaining

88   such perspectives thoughtfully and respectfully

89   • Communicate ideas effectively with diverse audiences, bridging geographic,

90   linguistic, ideological, and cultural barriers

91   • Take action to improve conditions, viewing themselves as players in the world

92   and participating reflectively.

93   **21st Century Skills and the Standards**

94   Both the CA CCSS for ELA/Literacy and the CA ELD Standards were designed

95   to support the development of broadly literate students who have the capacities of

96   literate individuals necessary for success in college, career, and civic participation in

97   today's world (NGA/CCSSO 2010, 6). (See Chapter 1 of this *ELA/ELD Framework*.)

98   Development of 21st century skills is crucial for the realization of the capacities of

99   literate individuals and many 21st century skills are integrated into the CCR Anchor

100 Standards, the CA CCSS for ELA/Literacy, and the CA ELD Standards. Thus, as

101 teachers support students' development of the capacities of literate individuals through

102 implementation of the standards, they are at the same time supporting the development

103 of many 21st century skills, and vice versa. Figure 10.4 displays the alignment between

104 the capacities of literate individuals and a sampling of 21st century skills identified by

105 the Partnership for 21st Century Skills (P21), the Committee on Defining Deeper

106 Learning and 21st Century Skills (DL), and the CCSSO EdSteps Initiative and Asia

107 Society Partnership for Global Learning (GL). The 21st century skills included in the

108 figure are representative, not exhaustive.

109

110　Figure 10.4. Alignment Between the Capacities of Literate Individuals and 21st Century

111　Skills Identified by the Partnership for 21st Century Skills (P21), Committee on Defining

112　Deeper Learning and 21st Century Skills (DL), and the CCSSO EdSteps Initiative and

113　Asia Society Partnership for Global Learning (GL)

Capacities of Literate Individuals	21st Century Skills
They demonstrate independence.	Self-direction (P21; DL) Metacognition (DL) Executive function (DL)
They build strong content knowledge.	Core subjects (P21) Knowledge (DL) Investigate the world (GL)
They respond to the varying demands of audience, task, purpose, and discipline.	Critical thinking and problem solving (P21) Perspective taking (DL) Communicate ideas (GL)
They comprehend as well as critique.	Critical thinking (P21; DL) Analysis (DL) Reasoning (DL)
They value evidence.	Informational literacy (P21) Reasoning (DL) Argumentation (DL)
They use technology and digital media strategically and capably.	Information, media, and technology skills (P21) Information and communications technology literacy (DL)
They come to understand other perspectives and cultures.	Global awareness (P21) Social and cross-cultural skills (P21) Cultural awareness and competence (DL) Appreciation for diversity (DL) Investigate the world (GL) Recognize perspectives(GL)

114

115　　　　In the next sections of this chapter, five sets of 21st century skills and their

116　relationship to the CA CCSS for ELA/Literacy and ELD Standards are highlighted.

117　These include the critical thinking, communication and collaboration, creativity and

118　innovation (the "four C's"), and global competence and technology skills.

119

120   **Critical Thinking Skills**

121   The need for students to think critically permeates the CA CCSS for ELA/Literacy

122   and CA ELD Standards at all levels and across all strands. Fostering critical thinking by

123   marrying ELA/Literacy and 21st century skills supports the development of students'

124   skills in literacy and responsible citizenship.

125   Critical thinking is among the capacities of literate individuals Specifically, the

126   CCSSO states:

127   *Students comprehend as well as critique.*

128   "Students are engaged and open-minded—but discerning—readers and

129   listeners. They work diligently to understand precisely what an author or

130   speaker is saying, but they also question an author's or speaker's

131   assumptions and premises and assess the veracity of claims and the

132   soundness of reasoning. (CCSSO 2010, p x. See also the Introduction of

133   this framework and Figure C in this chapter.)

134   Critical thinking is also one of learning and innovation skills (the "four C's")

135   identified by The Partnership for 21st Century Skills. (See Figure 10.1 in this chapter.)

136   Figure 10.5 displays the text from The Partnership of 21st Century Skills regarding

137   ciritical thinking, which, the Partnership argues, involves problem solving.

138

139

140 Figure 10.5. Text About Critical Thinking from The Partnership for 21st Century Skills

141 (2009)

Critical Thinking and Problem Solving

Reason Effectively

- Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation

Use Systems Thinking

- Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems

Make Judgments and Decisions

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Analyze and evaluate major alternative points of view
- Synthesize and make connections between information and arguments
- Interpret information and draw conclusions based on the best analysis
- Reflect critically on learning experiences and processes

Solve Problems

- Solve different kinds of non-familiar problems in both conventional and innovative ways
- Identify and ask significant questions that clarify various points of view and lead to better solutions

Partnership for 21st Century Skills, The. 2009. *P21 Framework Definitions*. Page 4.

http://www.p21.org/storage/documents/P21_Framework_Definitions.pdf

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142

143   Many of the CA CCSS for ELA/Literacy and CA ELD Standards call for

144 critical thinking. Students evaluate text and consider claims. They determine

145 points of view and explore the impact of word choices. They evaluate language

146 use. Representative CCR Anchor Standards of the CA CCSS for ELA/Literacy

147 and CA ELD Standards that require critical thinking are presented in Figure

148 10.6.

149

150 Figure 10.6. Selected CCR Anchor Standards of the CA CCSS for ELA/Literacy

151 and CA ELD Standards Critical Principles that Demand Critical Thinking

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CCR Anchor Standard: Reading

4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

6. Integrate and evaluate content presented in diverse media and formats, including visually and

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quantitatively, as well as in words.

8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

CCR Anchor Standard: Writing

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

CCR Anchor Standard: Speaking and Listening

2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

3. Evaluate a speakers point of view, reasoning, and use of evidence and rhetoric.

CCR Anchor Standard: Language

3. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

CA ELD Standards Critical Principle: Part I - Collaborative

3. Offering and justifying opinions, negotiating with and persuading others in communicative exchanges.

6. Reading closely literary and informational texts and viewing multimedia to determine how meaning is conveyed explicitly and implicitly through language

CA ELD Standards Critical Principle: Part I - Interpretive

7. Evaluating how well writers and speakers use language to support ideas and opinions with details or reasons depending on modality, text type, purpose, audience, topic, and content area.

8. Analyzing how writers and speakers use vocabulary and other language resources for specific purposes (to explain, persuade, entertain, etc.) depending on modality, text type, purpose, audience, topic, and content area.

CA ELD Standards Critical Principle: Part I - Productive

10. Writing literary and informational texts to present, describe, and explain ideas and information, using appropriate technology

11. Justifying own arguments and evaluating others' arguments in speaking and writing.

CA ELD Standards Criticle Principle: Part II - Learning About How English Works

1. Understanding text structure and organization based on purpose, text type, audience, and discipline.

152

153   Instruction in crticial thinking occurs in all grade levels and with students. As

154   students engage with texts, they learn to consider the following: Who is privileged?

155   Who is marginalized? Who and what is missing? Who is the author? What is the

156 author's objective? What are the author's perspectives and biases? Does the author

157 adequately support claims? These questions should be asked of every type of text in

158 every discipline. The *Model School Library Standards for California Public Schools*

159 *Kindergarten Through Grade Twelve* (California Department of Education 2010) also

160 provides grade-level standards that include address evaluation of information in text

161 and other sources. For example, students:

- 162 Understand that the Internet contains accurate and inaccurate information.
  163 (Grade Two, Standard 2.1c)
- 164 Identify the factors that make a source comprehensive, current, credible,
  165 authoritative, and accurate. (Grade Four, Standard 2.2a)
- 166 Assess the author's evidence to support claims and assertions, noting
  167 instances of bias and stereotypes in a variety of visual and audio materials.
  168 (Grade Seven, Standard 2.1a)
- 169 Evaluate online search results, demonstrating an understanding of how search
  170 engines determine rank or relevancy. (Standard 2.1a)

171 In addition, critical thinking is addressed in all academic core content areas and

172 *California's Career and Technical Education Model Curriculum Standards* (California

173 Department of Education 2013). Critical thinking is not context-free; it is embodied in

174 particular ways in different disciplines (National Research Council 2012).

175 **Communication and Collaboration Skills**

176 Communication and collaboration skills are two of the "4 Cs" identified by the

177 Partnership for 21st Century Skills, and these skills are key components of the CA

178 CCSS for ELA/Literacy and the CA ELD Standards as well as every content area.

179 Attention to effective communication occurs in each of the strands of the ELA/Literacy

180 standards and througout the Collaborative, Interpretive, and Productive modes of the

181 CA ELD Standards. Students write for a variety of audiences for a variety of purposes

182 using a variety of media; they learn to communicate effectively with peers, adults, and

183 external, sometimes unfamiliar, audiences. In discussions and presentations, students

184 attend to one another's ideas and convey their own clearly, they question and clarify to

185 ensure understanding, they consider and evaluate point of view and follow and develop

186 lines of argument, they interpret and strategically use diverse media to enhance

187 communication, and they adapt their communicative efforts to a variety of contexts and

188 tasks. Language standards focus on building students' skill with language conventions--

189 grammar, usage, and mechanics--as well as acquisition and accurate use of vocabulary

190 and phrases, including nuances in word meanings and figurative language so that

191 students communicate effectively. Reading standards include analysis of authors' use of

192 craft and structure to communicate with readers. In short, communication is at the very

193 core of ELA/Literacy programs.

194   Collaboration, too, is a prominent theme in the CA CCSS for ELA/Literacy and

195 the CA ELD Standards. Reading is sometimes a solitary act, especially as students

196 engage in independent reading, but it is often a social act as students work together to

197 engage in meaning making with text, to produce and publish their own texts, and to

198 conduct research and share knowledge through a variety of media. The importance of

199 collaboration is highlighted in CCR Anchor Standard 1 for Speaking and Listening:

200 Students prepare for and participate effectively in a range of conversations and

201 collaborations with diverse partners, building on others' ideas and expressing their own

202 clearly and persuasively. Collaboration is also emphasized throughout all four strands in

203 the Collaborative mode of the CA ELD Standards, with students collaborating in both

204 oral and written language, for multiple purposes and using various forms of technology.

205 Teachers at all grade levels and in all disciplines must plan for collaboration and ensure

206 that students engage with diverse partners for diverse purposes.

207   Communication and collaboration extend well beyond the classroom and face-to-

208 face interactions. With technological advances in recent years, there is now no need for

209 individuals to be in close physical proximity to engage in joint work. Work can be

210 accomplished in electronically connected groups (including online global learning

211 networks of groups investigating shared real-life concerns) in ways that were never

212 before possible. The importance of distance and group dynamics need to be recognized

213 when working in electronic workgroups. There are few interpersonal clues to assist

214 members of a workgroup so members must place a much greater reliance on the

215 content and perspective of the message to communicate. This is true of both receptive

216 and expressive communication. In other words, in face-to-face collaborations, nonverbal

217 cues, such as facial expressions and gestures, can contribute to understanding and

218   also reveal confusion, frustration, satisfaction, agreement, or other reactions of group

219   members to one another's ideas. Students, then, know to clarify their ideas by restating,

220   demonstrating, or providing a quick sketch, or they know the group has reached

221   consensus and is ready to move on to the next step. Electronic workgroups need to

222   establish protocols, such as how to pose a question, what terminology to use, and when

223   and in what form responses are expected, to enhance communication. Furthermore,

224   they need to develop and follow agreed-upon guidelines for building on the contributions

225   of one another, such as when a group document or presentation is being created.

226   Social networking is a special case of collaboration, but it often occurs without

227   the specific purpose of more conventional collaborations or workgroups. In light of the

228   popular use of social media by their students and its potential to offer borderless

229   communication and collaboration, teachers should include instruction in appropriate

230   purposes, behavior, and alternatives based on district guidelines and use policies.

231   (Anderson 2012 provides a process for creating guidelines.)

232   **Creativity and Innovation Skills**

233   As the California State Superintendent's *A Blueprint for Great Schools* notes:

234   The highest performing school systems in the world prepare their students

235   to apply rigorous academic content knowledge to real life situations. The

236   end goal is to foster each student's ability to create innovative solutions to

237   complex problems and to bring higher levels of economic prosperity and

238   social cohesion. As a result, these students are better able to lead more

239   productive and prosperous adult lives. Every California student deserves

240   these same opportunities. (California Department of Education 2011a, 11)

241   In fact, a survey for Association of American Colleges and Universities revealed that

242   employers give hiring preference to college graduates with skills that will enable them to

243   contribute to innovation in the workplace (Hart Research Associates 2013, p. 1).

244   California's recognition of the value of creativity and innovation is reiterated in the

245   Standards for Career Ready Practice, described in the *California Career Technical*

246   *Education Model Curriculum Standards* (California Department of Education 2013).

247   Standard 10 states that students in all career exploration and preparation programs in

248   Grades 7-12 should demonstrate creativity and innovation:

249   Career-ready individuals recommend ideas that solve problems in new

250   and different ways and contribute to the improvement of the organization.

251   They consider unconventional ideas and suggestions by others as

252   solutions to issues, tasks, or problems. They discern which ideas and

253   suggestions may have the greatest value. They seek new methods,

254   practices, and ideas from a variety of sources and apply those ideas to

255   their own workplace practices. (17-18)

256   Elements of creativity and innovation described by the Partnership for 21st

257   Century Skills are displayed in Figure 10.7.

258

259   Figure 10.7. Text About Critical Thinking from The Partnership for 21st Century Skills

Creativity and Innovation

Think Creatively

- Use a wide range of idea creation techniques (such as brainstorming)
- Create new and worthwhile ideas (both incremental and radical concepts)
- Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts

Work Creatively with Others

- Develop, implement and communicate new ideas to others effectively
- Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work
- Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas
- View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

Implement Innovations

- Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

Partnership for 21st Century Skills, The. 2009. *P21 Framework Definitions*. Pages 3-4.

http://www.p21.org/storage/documents/P21_Framework_Definitions

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261   Creativity and innovation are essential skills for success in the 21st century. It is

262   imperative that California's students be provided educational programs and

263   environments in which creativity is valued, encouraged, and taught in every discipline.

264   Furthermore, time and guidance must provided so that students can put their creative

265   ideas into practice as they engage in innovation. Creativity and innovation can be

266   nurtured by learning environments that "foster questioning, patience, openness to fresh

267   ideas, high levels of trust, and learning from mistakes and failures" (Trilling and Fadel

268   2009, 57-58).

269   Although creativity and innovation are not explicitly addressed in the CA CCSS

270   for ELA/Literacy or the CA ELD Standards, development of these skills is implied,

271   particularly in writing and presenting standards (Partnership for 21st Century Skills

272   2011, 12). Creativity and innovation should be fostered as students engage with texts

273   and ideas. Students should have many opportunities to creatively respond to texts,

274   produce texts, develop and deliver presentations, and engage in research to explore

275   their own questions. Imagination, flexibility, divergent thinking, receptiveness to the

276   ideas of others, and willingness to explore and take risks must be emphasized in the

277   ELA/Literacy curricula.

278   **Global Awareness and Competence**

279   California's wealth of diverse linguistic and cultural resources reflected in its

280   people are extraordinarily valuable assets for the state. All of California's students must

281   be provided instruction and opportunities to appreciate, understand and work with

282   individuals from different backgrounds. Furthermore, they must learn about global

283   issues—those than impact more than their neighborhoods and the nation—and develop

284   an understanding of different perspectives and the interrelationships among all humans.

285   The global competencies identified by the CCSSO EdSteps Initiative and Asia Society

286   Partnership for Global Learning, discussed at the beginning of this chapter, are aligned

287   with CCR Anchor Standards and CA ELD Standards in Figure 10.8.

288   Figure 10.8. Global Competences Aligned with CCR Anchor Standards of the CA CCSS for ELA/Literacy

Global Competence	CCR Anchor Standard or CA ELD Standard Critical Principles
Investigate the world beyond their immediate environment • Identify an issue, generate a question, and explain the significance of locally, regionally, and globally focused researchable questions • Use a variety of languages and domestic and international sources to identify and weigh relevant evidence in addressing a globally significant researchable question • Analyze, integrate, and synthesize evidence to construct coherent responses to globally significant researchable questions • Develop an argument based on compelling evidence that considers multiple perspectives and draws defensible conclusions	**Writing Anchor Standard 7**: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. **Writing Anchor Standard 8**: Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. **Writing Anchor Standard 9**: Draw evidence from literary or informational texts to support analysis, reflection, and research. **Writing Anchor Standard 1**: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. **Reading Anchor Standard 1**: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. **Reading Anchor Standard 8**: Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence. **ELD Standards Critical Principle: Part 1 - Productive,11**: Justifying own arguments and evaluating others' arguments in writing.
Recognize perspectives, others' and their own • Recognize and express their own perspective on situations, events, issues, or phenomena and identify the influences on that perspective • Examine perspectives of other people, groups, or schools	**Writing Anchor Standard 4:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience**.** **Reading Anchor Standard 6:** Assess how point of view or purpose shapes the content and style of a text.

Draft ELA/ELD Framework for first public review December 2013-February 2014

Global Competence	CCR Anchor Standard or CA ELD Standard Critical Principles
of thought and identify the influences on those perspectives • Explain how cultural interactions influence situations, events, issues, or phenomena, including the development of knowledge • Articulate how differential access to knowledge, technology, and resources affects quality of life and perspectives	**Reading Anchor Standard 9**: Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take. **Speaking and Listening Anchor Standard 3:** Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric. **ELD Standards Critical Principle: Part 1 - Interpretive, 8**: Analyzing how writers and speakers use vocabulary and other language resources for specific purposes (to explain, persuade, entertain, etc.) depending on modality, text type, purpose, audience, topic, and content area.
Communicate ideas effectively with diverse audiences • Recognize and express how diverse audiences may perceive different meanings from the same information and how that impacts communication • Listen to and communicate effectively with diverse people, using appropriate verbal and nonverbal behavior, languages, and strategies • Select and use appropriate technology and media to communicate with diverse audiences • Reflect on how effective communication impacts understanding and collaboration in an interdependent world	**Speaking and Listening Anchor Standard 1**: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively. **Speaking and Listening Anchor Standard 4**: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development and style are appropriate to task, purpose, and audience. **Speaking and Listening Anchor Standard 6**: Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate. **Language Anchor Standard 3**: Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening. **ELD Standards Crticial Principle: Part 1 - Collaborative,1**: Exchanging information and ideas with others through oral collaborative discussions on a range of social and academic topics.

Global Competence	CCR Anchor Standard or CA ELD Standard Critical Principles
Take action • Identify and create opportunities for personal or collaborative action to address situations, events, issues, or phenomena in ways that improve conditions • assess options and plan actions based on evidence and the potential for impact, taking into account previous approaches, varied perspectives, and potential consequences • Act, personally or collaboratively, in creative and ethical ways to contribute to improvement locally, regionally, or globally and assess the impact of the actions taken • Reflect on their capacity to advocate for and contribute to improvement locally, regionally, or globally	**Writing Anchor Standard 1**: Write arguments to support claims in an analysis of substantive topics or text using valid reasoning and relevant and sufficient evidence. **Writing Anchor Standard 7**: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. **Speaking and Listening Anchor Standard 4**: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development and style are appropriate to task, purpose, and audience. **ELD Standards Crtitical Principle: Part 1 - Productive,9**: Expressing information and ideas in formal oral presentations on academic topics. **ELD Standards Criticle Principle: Part 1 - Productive,11**: Justifying own arguments and evaluating others' arguments in writing. **ELD Standards Critical Principle: Part 1 - Productive,12**: Selecting and applying varied and precise vocabulary and other language resources to effectively convey ideas.

289   **Technology Skills**

290   Technology pervades modern society. It impacts most aspects of youth and

291   adults' personal and professional lives. Furthermore, it has the potential to substantially

292   support the achievement of many of the 21st century skills discussed previously in this

293   chapter: It expands and enriches opportunities for communication and collabortion; it is

294   a powerful tool for creativity and innovation; it can contribute to global awareness and

295   competence; and its wise use demands critical thinking. The question is not *whether*

296   technology will be used in classrooms, but rather how *best* to capitalize on technology

297   to support teachers and learners. In its report *A Blueprint for Great Schools*, the

298   Transition Advisory Team for the California State Superintendent recommended that

299   technology be incorporated "as a key component of teaching, learning, and

300   assessment" (CDE 2011a, 5) and that digital technology be made "as effective and

301   productive a tool in the school environment as it is in the world beyond schools" (12).

302   Surveys indicate that parents, too, consider technology important or extremely important

303   to student success and the school's core mission (Project Tomorrow 2013, 4).

304   Important in the context of this *ELA/ELD Framework* is that the Internet and

305   other forms of information and communication technologies (ICTs) are redefining

306   literacy (International Reading Association 2009). Students increasingly engage with

307   search engines, Web pages, podcasts and vodcasts, blogs, e-books, wikis, and the

308   ongoing flood of new ICTs in English and other languages. Students must learn how to

309   critically harness and manage the power of these media for accessing, evaluating,

310   creating, and sharing information with local and global others. At the same time,

311   teachers must ensure that students learn how to use technologies safely and ethically.

312   The International Reading Association (2009) notes that the use of these new

313   and dynamic forms of communication require new social practices, skills, strategies,

314   and dispositions; are central to full civic, economic, and personal participation in a

315   global community; rapidly change as defining technologies change; and are multiple,

316   multimodal, and multifaceted. The incorporation of a range of technologies into

317   ELA/Literacy/ELD instruction is crucial and demands thoughtful attention.

318   Technology skills are woven throughout the CCR Anchor Standards and CA

319   CCSS for ELA/Literacy. Among the technology skills identified in the CA CCSS for

320   ELA/Literacy are the following:

321   •   Use the Internet

322   •   Use search tools

323   •   Use keyboarding skills

324   •   Engage with digital text, including animations and interactive elements on Web

325   pages

326   •   Use digital media, including textual, graphical, audio, visual, and interactive

327   elements

328   •   Produce digital text

329   •   Use electronic menus

330   •   Consult digital reference materials

331   •   Interpret and produce multimedia presentations

332   The CA ELD Standards, too, demand technology skills, including the following:

333   •   Use communicative technology to interact with others

334   •   Use technology for publishing

335   •   Use tecchnology to develop graphics

336   •   View multimedia

337   Figure 10.9 lists CCR Anchor Standards and CA ELD Standards that explicitly

338   include technology and provides one or two examples of corresponding grade-level

339   standards. Also listed in Figure 10.8 are CCR Anchor Standards that do not explicitly

340   mention technology, but that have corresponding grade-level standards that mention

341   technology. It is important to note that even standards that do not mention technology

342   may be addressed with technology. For example, Writing Standard 2 across the grade

343   levels focuses on informative and explanatory writing. Technology is not mentioned in

344   the CCR Anchor Standard nor in any of the corresponding CA CCSS for ELA/Literacy.

345   However, at most grade levels, teachers are likely to encourage or require students use

346   the Internet to conduct research in preparation for some writing, use word processing

347 software to prepare some of these texts, including graphs and charts, and use

348 multimedia software to present some student-written informative and explanatory texts.

349   The standards recognize that students at all grade levels, even in the earliest

350 grades, need opportunities to interact with technology. Writing Standard 6 for

351 kindergarten, for example, states "With guidance and support from adults, explore a

352 variety of digital tools to produce and publish writing, including in collaboration with

353 peers." Guidance for young children's use of technology is provided in *Technology and*

354 *Interactive Media as Tools in Early Childhood Programs Serving Children from Birth*

355 *through Age 8* (2012), the position statement of the National Association for the

356 Education of Young Children and the Fred Rogers Center for Early Learning and

357 Children's Media at Saint Vincent College. Importantly, the guidelines assert that

358 "Effective uses of technology and media are active, hands-on, engaging, and

359 empowering; give the child control; provide adaptive scaffolds to ease the

360 accomplishment of tasks; and are used as one of many options to support children's

361 learning." (8)

362

363 Figure 10.9. CCR Anchor Standards and CA ELD Standards and Selected Grade-

364 Level/Profiency Level Standards with Explicit Technology Components (technology

365 component bolded)

Reading Anchor Standard 5: Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

- *Grade-Level Example*: RI.2.5 Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, **electronic menus, icons**) to locate key facts or information in a text efficiently.
- *Grade-Level Example*: RI.3.5 Use text features and **search tools** (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.

Reading Anchor Standard 7: Integrate and evaluate content presented in diverse **media** and formats, including visually and quantitatively, as well as in words.

- *Grade-Level Example*: RL.2.7 Use information gained from the illustrations and words in print or **digital text** to demonstrate understanding of its characters, setting, or plot.
- *Grade-Level Example*: L/HSS.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and **media** (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

Writing Anchor Standard 6: Use **technology**, including the **Internet**, to produce and publish writing and to interact and collaborate with others.

- *Grade-Level Example*: W.K.6 With guidance and support from adults, explore a variety of **digital tools** to produce and publish writing, including in collaboration with peers.
- *Grade-Level Example*: W.7.6 **Use technology, including the Internet**, to produce and publish writing and **link to** and cite sources as well as to interact and collaborate with others, including **linking to** and citing sources.

Writing Anchor Standard 8: Gather relevant information from multiple print and **digital sources**, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

- *Grade-Level Example*: W.3.8 Recall information from experiences or gather information from print and **digital sources**; take brief notes on sources and sort evidence into provided categories.
- *Grade-Level Example*: W/HSST.6.8 Gather relevant information from multiple print and **digital sources**; **using advanced searches effectively**; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Speaking and Listening Anchor Standard 2: Integrate and evaluate information presented in diverse **media** and formats, including visually, quantitatively, and orally.

- *Grade-Level Example*: SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other **media**.
- *Grade-Level Example*: SL.11-12.2 Integrate multiple sources of information presented in diverse formats and **media** (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

Speaking and Listening Anchor Standard 5: Make strategic use of **digital media** and visual displays of data to express information and enhance understanding of presentations.

- *Grade-Level Example*: SL.5.5 Include **multimedia components** (e.g., **graphics, sound**) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
- *Grade-Level Example*: SL.11-12.5 Make strategic use of **digital media** (e.g., **textual, graphical, audio, visual, and interactive elements**) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

Language Anchor Standard 4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

- *Grade-Level Example*: L.2.4e Use glossaries and beginning dictionaries, both print and **digital**, determine or clarify the meaning of words and phrases in all content areas.

- *Grade-Level Example*: L.9-10.4c Consult general and specialized reference materials (e.g., college-level dictionaries, rhyming dictionaries, bilingual dictionaries, glossaries, thesauruses), both print and **digital**, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech or its etymology.

ELD Standards Critical Principle: Part 1 - Collaborative, 2: Interacting with others in written English in various communicative forms (print, **communicative technology**, and **multimedia**)

- *Grade-Level Example*: Grade 3/Emerging: Collaborate with peers on joint writing projects of short informational and literary texts, using **technology** where appropriate for publishing, graphics, etc.
- *Grade-Level Example*: Grade 8/Bridging: Engage in extended written exchanges with peers and collaborate on complex written texts on a variety of topics, using **technology** when appropriate.

ELD Standards Critical Principle: Part 1 - Interpretive, 6: Reading closely literary and informational texts and viewing **multimedia** to determine how meaning is conveyed explicitly and implicitly through language.

- *Grade-Level Example*: Grade K/Expanding: Describe ideas, phenomena (e.g., how butterflies eat), and text elements (e.g., setting characters) in greater detail based on understanding of a variety of grade-level texts and viewing of **multimedia** with moderate support.
- *Grade-Level Example*: Grade 7/Bridging: Explain ideas, phenomena, processes, and text relationships (e.g., compare/contrast, cause/effect, problem/solution) based on close reading of a variety of grade-level texts and viewing of **multimedia** with light support.

ELD Standards Critical Principle: Part 1 - Productive, 10: Writing literary and informational texts to present, describe, and explain ideas and information, using appropriate **technology**.

- *Grade-Level Example*: Grade 2/Emerging: Write very short literary texts (e.g.,story) and informational texts (e.g., a description of a volcano) using familiar vocabulary collaboratively with an adult (e.g., joint construction of texts), with peers, and sometimes independently.
- *Grade-Level Example*: Grade 9-10/Expanding: (a) Write longer literary and informational texts (e.g., an argument about water rights) collaboratively (e.g., with peers) and independently using appropriate text organization and growing understanding of register.

366

367 Several topics related to the use of technology are discussed in the following

368 subsections.

369 ***Understanding Multimedia Text***

370 Much of the text encountered on the Internet and in electronic formats has both

371 conventional print elements and other media—graphics, sound, video, or animations.

372 These types of texts are often labeled "multimedia" documents. There are also sites

373 where there is no conventional text and all meaning is conveyed by other media.

374   Students need to learn how multimedia elements affect the messages being conveyed

375   by the document. They need to know when to attend to them and when they are less

376   important. Mayer (1997) demonstrated that graphics may be more useful for learners

377   who have little prior knowledge but not necessarily for those with considerable

378   knowledge of the topic. Sung and Mayer (2012) distinguish among three types of

379   multimedia text: instructive graphics (i.e., directly relevant to the instructional goal);

380   seductive graphics (i.e., highly interesting but not directly relevant to the instructional

381   goal); and decorative graphics (i.e., neutral but not directly relevant to the instructional

382   goal). Their research indicated that instructive graphics produced better learning. The

383   implication is that, at the very least, students should be taught how to distinguish among

384   these types of graphics.

385   Kim and Kamil (2003) identified some of the issues with multimedia inclusions in

386   text. They note that media need to be clearly elaborated and integrated with

387   conventional text and that text and other media need to be presented contiguously to be

388   maximally effective. They also state that students need to learn how to read and use

389   hyperlinks effectively because some students routinely click on all hyperlinks in the text

390   rather than ones that might be relevant to their purposes for reading. Because all texts

391   are not equally valuable or well written, the reader must decide when and how to use

392   hyperlinks, attend to multimedia, and be critical in evaluating the content. Multimedia

393   learning does not necessarily yield more learning and is not always more motivational

394   than other instructional options. Teachers should be critical in their review of multimedia

395   resources.

396   ***Using Software***

397   Specific software skills need to be taught in order to prepare students for using

398   technologies as tools. At a minimum, students should be prepared to use word

399   processors, database managers, spreadsheets, and presentation software by the time

400   they complete high school. Students are likely to encounter each of these types of

401   software in some form in educational and work settings. Building facility with such

402   programs early will help students learn to navigate newer programs as they evolve.

403   Word processing has been used extensively in schools for many years. Such

404   programs are an excellent way to facilitate writing development and reflect the need to

405 prepare students for the world of work or college where the use of such programs is

406 nearly universal. Although much of this will be taught as part of literacy instruction, a

407 large portion of this instruction also should be incorporated in the other disciplines.

408   Presentation programs should be used to allow students to create their own

409 multimedia documents, preparing them for the world after high school. This will also

410 allow instruction consistent with CA CCSS for ELA/Literacy and the CA ELD Standards

411 in that it can combine the various dimensions of language communication (that is,

412 reading, writing, speaking and listening) and multimedia text. Database and

413 spreadsheet programs are useful in teaching research skills as well as search

414 strategies. Instruction in the use of these programs will help students learn to process

415 information more directly and efficiently.

416   ***Online Learning***

417   Online delivery of instruction is increasingly popular. More than one million

418 kindergarten through grade twelve students enrolled in at least one online course in

419 2007-08, although most of these courses were at the high school level or in an

420 elementary/secondary setting (United States Department of Education 2009-10). Online

421 courses offer distinct advantages to districts in terms of cost and convenience,

422 especially for districts where students are distributed across a wide geographic area

423 and there might be challenges in delivering instruction in specific content areas.

424   Online learning will be an essential part of the future, both in school as well as

425 out of school. Students should be prepared to learn in an online medium and should

426 experience online learning in an instructional context during their school career. The

427 relative newness of online learning and the limited number of studies available suggest

428 that districts approach online instruction with caution, especially when the material is

429 intended to replace face-to-face instruction rather than to enhance it. A number of the

430 skills that students will need to complete online learning are affective in nature—for

431 example, perseverance and independence—and instruction in online learning should be

432 planned with these skills in mind. As noted earlier, these types of skills are reflected in

433 the CCSS's capacities of a literate individual described in Chapter 1 of this *ELA/ELD*

434 *Framework* and also listed in Figure 10.4 of this chapter. They are also prominent in the

435   intrapersonal and interpersonal cluster of deeper learning described at the beginning of

436   this chapter and presented in Figure 10.3.

437   ***Technology and Assessment***

438   Technology and other 21st century skills are an integral part of the new

439   assessment systems for the CA CCSS for ELA/Literacy. The multistate Smarter

440   Balanced Assessment Consortium (SBAC), of which California is a governing member,

441   includes computer-adaptive assessments that can respond to a student's initial

442   performance to more rapidly and accurately identify which skills the student has

443   mastered. These assessments also allow for a faster turnaround of test results so that

444   they can be used to inform instruction. More information on assessment is provided in

445   Chapter 9 and throughout this *ELA/ELD Framework*.

446   ***Digital Citizenship***

447   Also important are issues related to ethics, privacy, plagiarism, and

448   cyberbullying. Digital citizenship refers to responsible and appropriate use of

449   technology. Teachers should be well versed in district and school policies as well as

450   legal issues and must teach students about these issues. The *Model School Library*

451   *Standards for California Public Schools Kindergarten Through Grade Twelve* (CDE

452   2010) provides guidance. It include standards related to the ethical, legal, and safe use

453   of information in print, media, and online resources for every grade level. Examples

454   include the following:

455   **Kindergarten 3.1b:** Understand the need to ask a trusted adult for permission

456   when asked to provide personal information in person, on a form, or online.

457   **Grade Four 3.1b:** Understand the environment of Internet anonymity and that

458   not everyone on the Internet is truthful and reliable.

459   **Grades Seven and Eight 3.1a:** Explain ethical and legal issues related to the

460   use of intellectual property, including print, visual, audio, and online materials

461   (e.g., fair use, file sharing).

462   **Grades Nine Through Twelve 3.1i:** Practice strategies to protect digital devices

463   (e.g., antivirus software, secure connections, encryption, operating-system

464   updates).

465   In addition, guidance for the safe and responsible use of social media must be

466   addressed.

467   ***Home-School-Community Connections***

468   Technology can contribute to home-school-community relationships, which

469   California recognizes is fundamental to improved student learning outcomes (CDE

470   2011a, 2011b). Opportunities for communication are expanded significantly through the

471   use of email, video-conferencing, and social media tools. One survey revealed that

472   more than one-third of parents would like their child's teacher or school to communicate

473   with them via text messaging (Project Tomorrow 2013, 12). The range of technological

474   options for communication may contribute to the likelihood and timeliness of home-

475   school-community information exchanges and collaborations.

476   Examples of technology use to facilitate communication among homes, schools,

477   and communities include the following:

478   • Digital newsletters (provided in the languages of the homes) that highlight

479   classroom learning experiences and, with permission, include photographs and

480   videos

481   • Forums on which questions from homes, communities, and schools can be

482   posed and answered

483   • Classroom webpages that include classroom news and student work (with

484   permission)

485   • Online surveys of parents or guardians, students, and communities to determine

486   interests, hopes, and potential contributions to student learning

487   • Informative classroom blogs, podcasts, vodcasts

488   • Wikis for collaboration among students, parents or guardians, and community

489   members

490   • Online gradebooks, accessible by teachers, students, and parents or guardians

491   Print options should be made available to ensure access.

492   Technology provides a promising new form of parent involvement (Zieger and

493   Tan 2012). As they use technology to engage with homes and communities, educators

494   must model responsible, ethical, and secure use of technology. Schools should also

495 recognize that some families may have limited access to technology and so print

496 versions of information should be made available.

497 **Instructional Practices for 21st Century Learning**

498   The Committee on Defining Deeper Learning and 21st Century Skills

499 recommends the following research-based teaching methods to support 21st century

500 learners (National Research Council 2012, 181-182):

501 • Using multiple and varied representations of concepts and tasks, such as

502   diagrams, animations, and concrete experiences along with text

503 • Encouraging elaboration, questioning, and explanation, such as prompting

504   students to explain information and arguments as they read

505 • Engaging learners in challenging tasks while providing supportive guidance and

506   feedback

507 • Teaching with examples and cases, such as modeling how to prepare a

508   presentation or provide constructive feedback to a student author

509 • Priming student motivation, such as by connecting topics to students' lives and

510   interests, engaging them in collaborative work, and

511 • Using formative assessment.

512   Engagement with literature provides an exceptional forum for development of

513 21st century skills. The CA CCSS for ELA/Literacy and the CA ELD Standards ensure

514 that students engage richly with literary and informational text across the grade span

515 and throughout the curriculum. Figure 10.10 highlights several 21st century skills that

516 can be supported by a variety of instructional experiences with literary and informational

517 text.

518

519 Figure 10.10. Selected 21st Century Skills and Literary and Informational Text

520 Experiences

Students develop critical thinking when they

- Synthesize and organize text information.
- Examine text closely to interpret information, draw conclusions, and evaluate an author's decisions about content and form.
- Closely and critically examine visual aspects of a text, including illustrations, diagrams, and charts, for bias, perspective, aesthetic appeal, and representation.

- Identify the author's perspectives, biases, and use of rhetoric.
- Generate questions about the content, form, purposes or perspectives of a text.
- Communicate with others to understand their points of view, ideas, and interpretations.
- Identify real world local and global issues (e.g., social, economic, political, environmental) discussed in literary and informational text.

Students develop creative thinking when they

- Develop dramatic, poetic, media, and visual responses to literary and informational text.
- Engage in idea-generation activities, such as brainstorming.
- Participate in activities that spark their curiosity about text or text topics.
- Create presentations to share understandings of text.
- Create facebook pages, blogs, or tweets for characters or historical figures.
- Generate research questions and procedures in response to text.

Students develop communication and collaboration skills when they

- Present orally or in written, digital or visual form, both informally and formally, their responses to and understandings of a text selection.
- Share understandings with one another and build on the ideas and interpretations of others.
- Communicate in large and small groups about literary and informational text for a variety of purposes, including to inform, question, clarify, or persuade.
- Elaborate on their own and others' ideas about texts.
- Plan and organize individual and collaborative presentations to convey or extend text information, ideas or themes, with an audience in mind.
- Discuss with peers different interpretations of text and reasons for those interpretations.
- Interact in meaningful ways with peers of diverse backgrounds and discuss different and similar perspectives on issues.

Students develop social and cross-cultural skills and global competence when they

- Interact with local and distant others to share responses to information, themes, characters, illustrations, and author's choices.
- Collaborate with diverse partners to design and develop presentations or projects in response to literature.
- Engage with literature that presents a range of world perspectives and experiences.
- Respectfully and with an open mind discuss literature with peers from diverse backgrounds.
- Capitalize on proficiency in languages other than english to communicate with global peers.

Students develop technology skills when they

- Engage with digital and multimedia text.
- Engage in additional investigation of topics in a text using technology, such as the internet.
- Use a variety of technologies, such as computers, tablets, projection systems, document cameras, and mp3 players or ipods, to share information from or responses to a text or to learn more about a topic or author.

> - Examine text carefully to locate and use pertinent information to support a position, justify an interpretation, or make a point.

521   (adapted from Yopp and Yopp 2014)

522

523   **Equitable Access**

524   All students must have access to curricula, instruction, and learning

525   environments that develop their critical and creative thinking, communication and

526   collaboration skills, global competence and other 21st century skills. Attention to these

527   skills must not be set aside until after students develop proficiency with reading and

528   writing or with English as an additional language. They are a crucial component of every

529   student's education. Highlighted in this section is access to technology.

530   **Technology**

531   The term "digital divide" was coined in the 1990s to reference the gap in access

532   to computers and the Internet that separated different demographic and socioeconomic

533   groups in the United States. The concept was popularized by a series of reports

534   conducted by the National Telecommunications and Information Administration called,

535   "Falling through the Net" (NTIA 1995, 1998, 1999, 2000). These reports found that rural,

536   socioeconomically disadvantaged, and minority groups tended to have less access to

537   modern information and communication technology and the benefits provided by those

538   connections.

539   While the gap in access has closed somewhat over the last two decades, U.S.

540   Census data reveals that in 2011 95.2 percent of individuals in the highest household

541   income bracket had access to the Internet at home whereas only 50.2 percent of

542   individuals in the lowest household income bracket had access in the home. The

543   percentages of white, Asian, African-American, and Hispanic households with Internet

544   use was 81.7 percent; 87.4 percent, 63.2 and 63.0 percent, respectively. Furthermore,

545   there are concerns that populations of color are less likely to be involved with social

546   media and Web 2.0 applications that include rich content and technologies for

547   networking and collaboration online (Payton 2003; Trotter 2007).

548   Given the overlap between the groups involved in the digital divide and the

549   achievement gap in student performance, it is important that districts, schools, and

550   teachers remain alert to the issue of equitable access to technology. While federal

551   grants and other funding have helped balance the technology available in schools, there

552   may still be significant gaps in the technology that students have access to outside of

553   their school environments. Studies have shown that gaps in access to reading material

554   affect outcomes in reading achievement, and gaps in access to technology likely will

555   have as much impact upon student success in a 21st century learning environment.

556   Solutions to address these gaps may include giving students access to computer

557   resources outside of school hours, issuing technology devices to students to take home,

558   and training teachers to be aware of these issues and providing them with strategies to

559   address them as part of their professional development (Davis, Fullerton, Jackson,

560   Pittman and Sweet 2007).

561   Technology can help ensure that all children have access to the standards-based

562   academic curriculum. Issues of equitable access are discussed in more detail in another

563   chapter of this framework, but the specific capability of technology to support a range of

564   learners is noted here. The discussions that follow are not intended to suggest these

565   are mutually exclusive populations of students.

566   ***Accessibility for Students with Disabilities***

567   Assistive technology can be used to help students with disabilities gain access to

568   the core curriculum and perform functions that might otherwise be difficult or impossible.

569   This technology can be a hardware device that helps a student overcome a physical

570   disability or adaptive software that modifies content so that a student can access the

571   curriculum. One example is a digital talking book that reads content that a student

572   cannot access due to a visual handicap or a learning disability that affects reading. A

573   student with motor difficulties might use an enlarged, simplified computer keyboard, a

574   talking computer with a joystick, head-gear, or eye selection devices. Software that

575   differentiates instruction can also be used to meet the needs of diverse students as well

576   as those who are below grade level. The CDE's Clearinghouse for Specialized Media

577   and Translations (http://www.cde.ca.gov/re/pn/sm/) produces accessible versions of

578   textbooks, workbooks assessments, and ancillary student instructional materials.

579   Accessible formats include Braille, large print, audio, and digital files ranging from Rich

580 Text Files (RTF), HyperText Markup Language (HTML), Digital Accessible Information

581 System (DAISY), and Portable Document Format (PDF).

582   ***English Learners***

583   Technology can be used to support English learners' language and literacy

584 development. Software that uses visual cues to assist in the teaching of reading

585 concepts can help students with developing English proficiency gain understanding. A

586 2010 study of one district's Digital Learning Classroom project found that interactive

587 whiteboard technology used in grades three and five increased English learners

588 achievement and helped to close the achievement gap between English learners and

589 students who are proficient in English (Lopez 2010).

590   ***Advanced Learners***

591   Technology can contribute to a challenging and intellectually engaging

592 educational environment for advanced learners. Computer programs that include self-

593 paced options and allow students to explore advanced concepts can keep these

594 students engaged in the learning process. Technology that facilitates a collaborative

595 learning environment can also help advanced students become involved with their

596 peers' study of reading and writing, a more useful outcome than sending them off to

597 study independently. In addition, technology allows for extraordinary creativy and self-

598 direction.

599 **Professional Learning and Teacher Support**

600   Professional learning is addressed in Chapter 11 of this *ELA/ELD Framework*

601 and so is only briefly noted here. It is critical that teachers are provided excellent

602 professional support as they increasingly integrate 21st century skills into every

603 curricular area. They must be provided opportunities to collaborate in learning and

604 planning, which can occur face-to-face or through virtual communities of practice. They

605 must share and be provided rich models of effective 21st century instruction and

606 curriculum, engage in thoughtful reflection and critique of lessons, and build on and

607 refine instruction together. Because of the remarkable speed of technological

608 innovation, professional learning must ongoing. Teachers cannot be expected to use

609 technology wisely and productively with students if they are uncomfortable or unfamiliar

610 with the possibilities that the wide variety of tools provide.

611 **Future Directions**

612   There is a moral imperative to provide students with a skill set that will prepare

613   them for the world in which 21st century skills will be increasingly central in their

614   ongoing educations, careers, and daily lives. Students need to learn about the uses and

615   possible abuses of technology and how to accommodate them in their lives. And,

616   becoming adept in collaborative endeavors and independent learning will be valued

617   increasingly in the future.

618   The popularity of listening and viewing (such as with podcasts and vodcasts)

619   suggests the need for greater attention to both these skills. Writing and reading need to

620   be adapted to include ways to incorporate multimedia elements in effective ways.

621   Above all, it will be important to instill in students the need to be highly critical of

622   what they read, hear, and view and to privilege the use of evidence as part of the

623   arguments they read and formulate. Critical analysis and evaluation of content will be

624   the cachet of the future and one of the few ways that will ensure success in college or

625   career and in civic participation. In addition, teaching students to be independent and

626   flexible learners who can work in groups when necessary, but who are capable of taking

627   action independently will be essential.

628   The payoffs for these efforts will be the preparation of students who can

629   contribute to and participate in whatever the future delivers.

Snapshot 10.1 Integrating Technology into an Extended Writing Project in Grade Two
After reading and discussing several informational books about reptiles, second graders work in pairs to write their own informational text about a reptile of their choice. They gather books from the library and explore the Internet together, using search terms discussed with the teacher. They write a list of key ideas in several categories, such as appearance, habitat, and eating habits. They also record special vocabulary. Students researching the common snapping turtle, for example, record the terms *rigid carapace*, *freshwater,* and *omnivore* because they want to be sure to use them in their text. Each team creates a draft modeled after the texts the teacher had read aloud and discussed with the class. Students' drafts are shared with the teacher who provides feedback and guidance. When ready, each student pair develops a final version, having made presentation decisions, and includes informational text features appropriate to their piece of writing, such a Table of Contents, bolded words, captions, and headings. As a finishing touch on their projects, students add Quick Response (QR) Codes to each page of their books, a technology with which they previously had gained experience. Each code allows viewers of the book use a class QR scanner (such as an app installed on a tablet or Smartphone) to listen to translations that

bilingual students record. This is important as some of the students in the classroom will be more comfortable interacting with the book in their home language. Similarly, the books may be shared with family members who are developing English.

CA CCSS for ELA/Literacy: W.2.7, W.2.2, W.2.6, RI.2.5, SL.2.5 , LS.2.6 L.2.1, L.2.2, L.2.3

CA ELD Standards: ELD.PI.2.1, 2, 4, 10, 12; ELD.PII.2.1-7

Next Generation Science Standard:

2-LS4-1: There are many different kinds of living things in any area, and they exist in different places on land and in water.

21st Century Skills: communication and collaboration, creativity, problem solving, media and technology skills

630

Snapshot 10.2 Sixth Graders Create Book Trailers
Because she understands the cumulative advantage of reading volume, Ms. Edwards ensures that her sixth grade students have many opportunities to engage in independent reading. She has a wide selection of texts available in the classroom, and she meets with individuals regularly to discuss their selections and make recommendations. Knowing that peers have a powerful influence on one another, she has students create book trailers of favorite literature that serve to pique prospective readers' interest, just as movie trailers draw viewers into a theatre. Students are given the option to work alone or in small teams if several students have read the same book and wish to collaborate on the project. She shows several movie trailers and students discuss the important features. How long are the trailers? How many individual scenes are used? What is their purpose? Is the purpose realized? If so, how? What techniques are employed by the producers? Which techniques did they, the viewers, find effective? What movies do they want to see as a result of viewing the trailers? Why? She also reminds students of the available technology in the classroom; the students have used the digital cameras and moviemaking software for other projects. Each student or team of students begins by brainstorming the appealing aspects of their selected book and they think about how they might convince their peers that the book is worth reading. Then, after instruction and plentiful examples, they develop story boards, plans to guide production, and they write a script. Students keep in mind that the intent of the book trailer is to inspire others, including peers around the globe, to read the book. They consider the images, sound, and language they will use as well as the organization and presentation, always with their audience in mind. They film, download images from the Internet (careful to avoid copyright violations), add text, and include an opening screen and a credit roll. They share their first draft with the teacher and take advantage of feedback to revise, edit, and polish their work. Over several days, the book trailers are shared. Students applaud one another's work. Book trailers are kept in an electronic file on class computer for occasional viewing by peers when they are ready to select their next book for independent reading. They are also posted online so the students' recommendations can be accessed by a global audience. They are clearly

labeled by genre, discipline, and age span.

CA CCSS for ELA/Literacy: RL.6.2; W.6.6; SL.6.2; SL.6.4; SL.6.5; SL.6.6; L.6.1; L.6.2

21st Century Skills: communication and collaboration, creativity, problem solving, media and technology skills, global competence

631

Snapshot 10.3 An Eleventh Grader Creates Interactive Timeline

As part of their study of U.S. foreign policy since World War II, students in an eleventh grade history class select a topic for independent research. One student selects McCarthyism and gathers and reviews relevant information from multiple authoritative print and digital sources, including those from outside the U.S. to ensure a variety of perspectives. Based on past instructional input and experiences, she critically analyzes the materials for bias and then makes decisions about resources to use and key information to report. The student then develops an interactive timeline using online software. Her timeline identifies key events, including the birth of Joseph McCarthy, his election to the Senate, the rise to power of Mao Zedong in China, and the launch of McCarthy's anti-communist crusade. The student writes brief texts about the events, which can be accessed by clicking on an icon she posts on the timeline. She also inserts excerpts from historic documents, such as the text of a speech and several newspaper headlines or accounts. The student adds images and video clips, including footage of one of McCarthy speeches and responses to McCarthy's blacklist, making the era come to life for her audience. The timeline is formally presented to peers and also posted to a class webpage, where classmates may comment.

CA CCSS for ELA/Literacy: SL.11-12.5; RH.11-12.2; RH.11-12.7; WHST.11-12.7

History-Social Science Content Standard:

11.9.3: Students analyze U.S. foreign policy since World War II.

Trace the origins and geopolitical consequences (foreign and domestic) of the Cold War and containment policy, including the following:

- The era of McCarthyism, instances of domestic Communism (e.g., Alger Hiss) and blacklisting
- The Truman Doctrine
- The Berlin Blockade
- The Korean War
- The Bay of Pigs invasion and the Cuban Missile Crisis
- Atomic testing in the American West, the "mutual assured destruction" doctrine, and disarmament policies
- The Vietnam War
- Latin American policy

21st Century Skills: communication and collaboration, creativity, problem solving, media and technology skills, information literacy, self-direction

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