



PaSLP Essential Element 4

Essential Element 4: 21st Century Classrooms

Students in 21st century classrooms will need to be equipped with skills that go beyond what classrooms currently offer to meet future demands and address complex problems that can't be anticipated or presently conceived. Classrooms must offer students opportunities to develop real-world problem-solving skills that enable them to think critically and creatively, work collaboratively with others, and analyze, interpret, and synthesize information. Additionally, teachers in 21st century classrooms must have the knowledge and skills that allow them to provide students with opportunities to grapple with new, challenging, and difficult information. Such difficult learning should occur in an environment that is engaging, fosters resiliency, and includes both print and digital resources.

Rationale

Students who can think critically and communicate effectively must build on a base of core academic subject knowledge” (<http://www.p21.org>). *Twenty-first century skills* is a broad term, referring to knowledge, skills, work habits, and character traits needed to succeed as a student, a citizen, and in a chosen career. Students need to be provided with engaging materials that incorporate these elements in a meaningful way.

What is a 21st Century Classroom?

Technology and its many uses for teaching and learning comes to mind when visualizing a 21st century classroom—and certainly the integration of technology in schools is an integral feature of such classrooms. However, 21st century skills are much more than knowing how to navigate a computer. According to the U.S. Department of Educational Technology (USDOET), for students to be successful in society and the workplace of the 21st century, they need core content knowledge, life skills, and the ability to identify and create innovative ideas and tools that enable problem-solving (Shechtman, DeBarger, & Dornsife, et al., 2013). Lack of problem-solving skills can have an astoundingly negative impact on employment (Casner-Lotto & Barrington, 2006; Shechtman, DeBarger, & Dornsife, et al., 2013). Between 65% and 80% of employers identified the five most important 21st century skills as teamwork, leadership, written and oral communication, initiative, and problem-solving skills (Job Outlook, 2016). When reviewing this list, it is evident that both academic and non-academic skills are critical for life success.

Although 21st century classrooms can be defined somewhat differently by scholars and educators, the description below provides a comprehensive summary of what success in the 21st century might entail:

Success in the 21st century requires knowing how to learn. Students today will likely have several careers in their lifetime. They must develop strong critical thinking and interpersonal communication skills to be successful in an increasingly fluid, interconnected, and complex world. Technology allows for 24/7 access to information, constant social interaction, and easily created and shared digital content. In this setting, educators can leverage technology to create an engaging and personalized environment



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to meet the emerging educational needs of this generation. No longer does learning have to be one-size-fits-all or confined to the classroom. The opportunities afforded by technology should be used to re-imagine 21st century education, focusing on preparing students to be learners for life. Students demonstrate the three Rs, but also the three Cs: creativity, communication, and collaboration. They demonstrate digital literacy as well as civic responsibility. Virtual tools and open-source software create borderless learning territories for students of all ages, anytime and anywhere. (Karen Cator, Director of Educational Technology, U.S. Department of Education, Education Week, October 11, 2010).

Teachers in 21st Century Classrooms

The 21st century classroom also requires teachers who are facilitators and understand how to guide students in their pursuit of knowledge. These teachers recognize the need for student choice and engagement. They provide opportunities for students to work independently, in small groups, as well as in a large group. Effective teachers in 21st century classrooms also understand how to engage students and structure activities that help them develop resiliency. They understand how to orchestrate learning that promotes the 4Cs: critical thinking, communication, collaboration, and creativity. In the graphic below, we present a Framework for 21st Century Learning that describes the importance of these 4Cs and how they can influence teaching practices (<http://www.p21.org>).

Figure 5. 21st Century Learning





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Although all the components in the graphic are critical for 21st century classrooms, this essential element is focused on “Learning and Innovation Skills-4Cs.”

Learning and Innovation Skills - 4Cs

Critical Thinking, Communication, Collaboration, and Creativity

Critical Thinking: Although there are numerous definitions of critical thinking, all encompass the importance of reflective, analytical, evaluative, and deliberative skills and characteristics. Explicit attention to the fostering of critical thinking skills and sub-skills, as well as dispositions, is essential at all levels of the K-12 curriculum. Activities that provide opportunities for critical thinking can be incorporated within all the content fields as well as during literacy instruction.

Communication: To support effective communication in the classroom, teachers must provide relevant and effective experiences that enable students in all content areas to use oral, written, and nonverbal communication skills for multiple purposes. Additionally, given the increase in digital communication using social media such as texting and Twitter, students need to be given opportunities to develop skills to use electronic interaction appropriately.

Collaboration: Twenty-first century classrooms are those in which the climate is conducive to collaborating. Collaboration is viewed as a process leading to desired individual and group outcomes, such as successful problem-solving and enhanced intellectual development. Collaboration can be developed within any content area or academic discipline (e.g. small group discussion, research, collaborative inquiry).

Creativity: Creativity, like communication and collaboration, can be cultivated, but it requires a classroom that is amenable to promoting creativity. Practices that promote creativity include: explicitly teaching for creative thinking, providing students with choice and exploratory learning, encouraging students’ intrinsic motivation, and providing opportunities for students to use their imagination and exhibit divergent thinking.

Communicating and collaborating effectively while thinking creatively and critically are essential for success in the 21st century. For students to develop these skills, they must be in classrooms that support their development. The environment in such classrooms offers opportunities for students to take calculated risks, as well as multiple opportunities to talk, listen, read, and write. The 4Cs support students in developing the initiative and ability to solve complex problems in multiple ways. As mentioned previously, 21st century classrooms are also ones in which students are engaged and in which they have been able to develop the resiliency that enables them to *stick-to* a task.



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Student Engagement and Academic Resiliency in 21st Century Classrooms

Both engagement and academic resiliency are essential for developing students' intrinsic motivation to learn, for continuing with assigned tasks, and ultimately for developing literate students. When students are motivated to learn, they develop the stamina to continue to learn and become productive citizens (Duckworth, 2016; Hoerr, 2017; Kallick & Zmuda, 2017). Both engagement and academic resilience are discussed below.

Student Engagement: “In education, student engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education” (edglossary.org/student-engagement). Effective literacy programs focus on developing students who are engaged, interested, and motivated to read and write.

In fact, Guthrie (2004) found that more highly engaged readers from homes with fewer materials or educational advantages routinely out-performed less engaged readers from more advantaged home environments. Reading motivation predicts both the amount of reading and reading comprehension (Guthrie, Wigfield, Metsala, & Cox, 1999). According to Guthrie (as cited in Allington, 2009), the relationship between engaged reading and comprehension was stronger than any other relationship identified on the National Assessment of Educational Progress. Research consistently shows that more access to books results in more reading, and that students who read more become better readers, writers, and show improvements in vocabulary and grammar (Krashen, 2004). Engaged learners work in a motivated way; they employ whatever skills and strategies they have with effort, persistence, and an expectation of success (Duckworth, 2017; Guthrie & Wigfield, 1997; Hoerr, 2017). Purposeful reading that is intrinsically motivated will help develop engaged readers. Furthermore, engagement in reading has helped students overcome obstacles, such as low family income and a less varied educational background (Seligman, 2011).

Academic Resiliency: Academic resiliency is also a critical factor that influences literacy development. Academic resiliency refers to a student's ability to persist, even in the face of multiple academic difficulties (McTigue, Washburn, & Liew, 2009). Resilient students are those driven by their own goal of mastery. The *Resiliency Wheel* (Henderson, Bernard, & Sharp, 2000, p. 8) diagrams a way that schools and all youth-serving organizations can show young people how to successfully meet the stresses and challenges in life (see Figure 6). Henderson, Bernard, and Sharp (2000) suggested that schools and youth organizations should:

- Provide care and support;
- Set and communicate high and realistic expectations;
- Provide opportunities for meaningful participation;
- Increase bonding or connectedness;



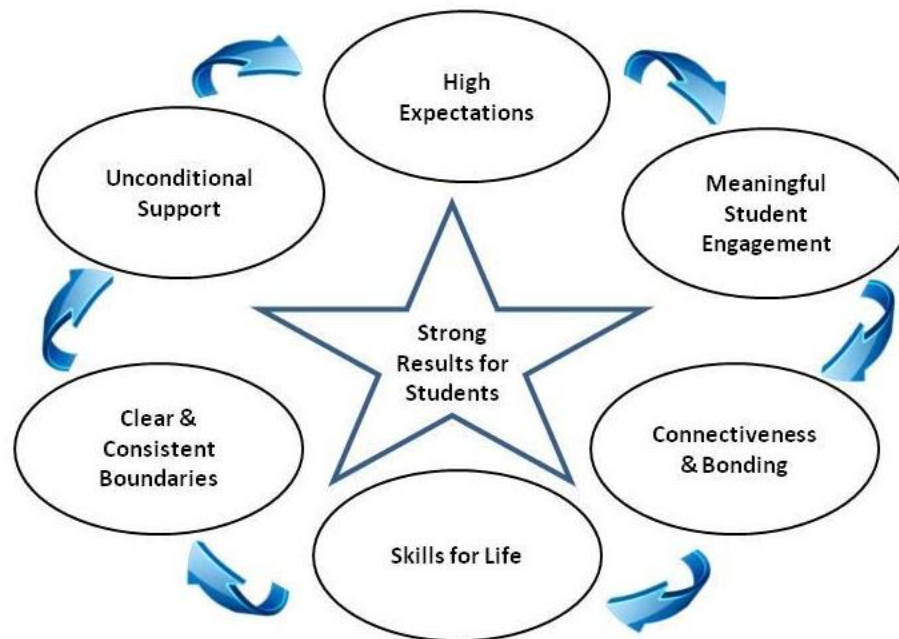
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- Set clear and consistent boundaries; and
- Teach life skills.

Just as Henderson et al.'s (2000) six factors work for enhancing a student's personal resiliency, the same factors support academic resiliency. Teachers who provide effective literacy instruction work with students to set high, yet realistic, reading goals and engage

in meaningful literary experiences. Their lessons set clear and consistent boundaries, and the teachers provide unconditional support to all learners.

Figure 6: The Resiliency Wheel



**Adapted from N. Henderson and M. Milstein, Resiliency in Schools, 2003. p.12)*

In summary, the 21st century classroom is one in which students are engaged in meaningful tasks that require inquiry and problem solving; they work collaboratively and have opportunities to communicate both orally and in writing, using both digital and print resources. Teachers understand how to provide structured support and facilitate student learning. They understand how to engage students in ways that promote resiliency.

Implications

Below are implications related to developing 21st century classrooms. They include ideas for developing the types of classrooms that promote the 4Cs, engagement, and academic



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resiliency. They also provide suggestions for teachers about the use of the internet in the classrooms.

1. Building relationships with students that demonstrate an appreciation for and understanding of individual differences and interests.

The strategies located below emphasize the importance of building relationships to enhance students' resiliency. Additionally, strong, caring relationships are critical for developing risk-free classrooms in which there is critical thinking, communication, collaboration, and creativity (the 4Cs of 21st Century Classrooms).

Strategies for Developing Relationships

- Provide a caring relationship with students by supporting, respecting, validating, showing compassion, and modeling resiliency.
- Remind students that making mistakes is part of the learning process and that a growth mindset is critical to lifelong learning.
- Stress high expectations and achievement by believing in students' innate capacities.
- Provide student-centered instruction, structure for growth and risk, and focus on strengths.
- Give students power and responsibility in interactive groups, e.g. making choices, solving problems, expressing opinion, and reflecting (Goodwin, 2007).
- Use technology as a tool for building engagement.

2. Developing classrooms that Emphasize the 4Cs of Critical Thinking, Communication, Collaboration, and Creativity

General Ideas:

- Ask high-level questions and open-ended questions that require students to think critically and creatively. Likewise, encourage students to ask questions that require high level thinking. Provide opportunities for students to respond to questions in multiple ways. Such responses can be generated without technological tools, but multimedia authoring enables students to create products that reflect their uniqueness, interests, and individuality
- Encourage and support students to use technological tools to write reports or essays (think pieces) that solve problems; let them share their solutions in creative ways, using formats such as digital stories, eBooks, virtual museums, video journals, news broadcasts, and interactive games.
- Have students work together to collaborate on specific reports or documents. Students can work together using GoogleDocs, Pixie, Frames, Share, etc.
- Provide opportunities for students to participate in truly collaborative project work. (Adapted from The 21st century classroom – where the 3 R's meet the 4 C's!. Posted by Melinda Kolk on 3/30/2011.)



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• 3. Using the Internet in the Classroom: Ideas for Teachers

- **Become familiar with technology use:** Teachers have the responsibility to become familiar and comfortable with technology, especially with the internet, as a means of learning. They, however, need to be aware of its limitations as well as its potential for learning. www.iste.org
- **Model appropriate online correspondence:** Share your own online interactions with students. When relevant and appropriate, talk about how you are learning from others. Introduce students to learners who are passionate about the subjects they are studying.
- **Model and provide opportunities to practice appropriate internet interactions (Netiquette):** ▪
 - Some suggestions for supporting internet literacy include:
 - When typing, **never** write in all capital letters as it can be considered shouting.
 - Don't plagiarize information or pictures. Always use citations when sharing others' information.
 - Don't gossip and keep personal information personal. Ensure that correspondence is factual.
 - Use discretion. Remember that anything you put on the internet can be there forever.
 - Post only conversations you are willing to have in person. If not, don't post it.
- **Share student work:** Create a classroom website where you can regularly publish student work. As much as possible, make sharing a natural part of the learning process, publishing interesting student blog posts, videos, or other quality artifacts that students create. Find ways to encourage discussion and interactions from readers online. With younger students, moderate those interactions. With older students, share strategies for moderating and vetting to help them become responsible for monitoring and responding to comments on their own. Have discussions on what appropriate interactions look like and how to validate participant's identity. Help students learn how to respond to comments appropriately.

• 4. Using Read-alouds as a Means of Engaging and Motivating Students to Read

Read-alouds can be used at all levels; they provide students with opportunities to learn as well as enjoyment as they listen to a fluent reader.

Why read-alouds:

- Read-alouds are risk free: Language and literacy can be enjoyed without risk.
- Read-alouds build mental models that help students develop as self-motivated readers. These models can provide perspectives in addition to or in place of textbooks.



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- Read-alouds set the stage for learning to read and reading to learn. They help students with several critical reading components: reading motivation, word knowledge, syntax, story grammar, genre knowledge, authors' intentions, readers' choices, and understanding. (Allen, 2000, p. 45-47)

Effective read-alouds generally have the following characteristics:

- Books appropriate to students' interests and matched to students' developmental, emotional, and social levels;
- Selections that have been previewed and practiced by the teacher;
- An established, clear purpose for the read-aloud;
- Fluent oral reading is modeled; reading is animated, with appropriate expression and prosody; and the reader stops periodically to thoughtfully question the students to focus them on specifics of the text; and
- Connected to independent reading and writing.

For more information, see Interactive read-alouds: Is there a common set of instructional practices? 2004 International Reading Association (pp. 8–17, doi:10.1598/RT.58.1.1)

Birth to Age 5

Research in early literacy emphasizes that the natural mastery of skills for children birth to age five is through the enjoyment of print resources, the importance of positive interactions between young children and adults, and the critical role of literacy-rich experiences. These positive interactions play a critical role in developing play-based literacy and language experiences. When children have positive interactions with print resources, they are developing good feelings about reading, which motivates them to continue seeking books and other literacy materials as they grow. The emotional bonds between young children and their families or caregivers, other adults, and peers influence children's motivation and potential to learn (Snow, Burns, & Griffin, 1998). Children can:

- Choose a favorite book;
- Ask adults to read to them; or
- Pretend to read.

If children are engaged and enjoying themselves, they are learning. Children benefit by experiences such as:

- Purposeful and playful exposure to a variety of printed materials;
- Hearing quality literature read daily; and
- Participating in discussion about the pictures in books. These discussions provide opportunities for children to think creatively and critically, and to learn from others.

It is through positive, meaningful relationships and experiences that children gain confidence in their ability to explore and learn from the world around them. When families or caregivers and



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other adults share stories, songs, and books with children, they not only model literacy skills but also give children the message early; learning to read and write is important. Exposure to books and stories that have interesting content, rich vocabulary, and detailed illustrations is imperative for helping young children build oral language and vocabulary.

Children benefit from experiences in which adults:

- Model rich spoken language;
- Provide opportunities for children to experiment and play with the sounds that words make through rhymes, nonsense words, poems, music, and chants;
- Read books that contain rich language (rhyme, repetition, and rhythm); and
- Encourage children to use new vocabulary words when discussing pictures or real objects.

In the classroom, teachers should provide:

- Access to high-quality and large quantities of literature in a variety of formats;
- Learning centers for children to engage with each other, and with words and pictures; and
- Classroom libraries where learners can independently interact with quality books (www.ala.org).

In a world of interactive media, children are comfortable with using digital devices, and these tools have a powerful influence on student engagement with literacy. In its position statement regarding technology in education (NAEYC, 2011), NAEYC recommends that early childhood educators recognize the importance of technology and digital media as valuable tools to be used intentionally with children. These tools extend and support students' authentic and active engagement with others around them. They recommend that educators:

- Allow children to explore digital materials in the context of human interactions, with an adult as mediator and co-player.
- Use shared technology time as an opportunity to talk with children, use new vocabulary, and model appropriate use, as with shared book reading.

Grades K-5

According to the Pennsylvania Literacy Framework:

“A relationship exists between young children’s motivation to learn and their perception that adults care about them as individuals and their learning. Caring is one element that appears to most strongly influence whether children enjoy school (Lumsden,1999). This suggests that caring environments with clear, high expectations are the underpinnings of motivation. The nature of students’ relationships with teachers is central to what makes school appealing or distasteful, inviting or uninviting.” (PDE, 2014, p. 2.15-2.16)

When students understand that with appropriately leveled texts and many reading opportunities, they can improve their reading proficiencies, students will successfully



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engage in the work and practice needed to become better readers. Students become engaged when they know teachers care about them, what they are learning matters, and they possess the skills necessary to meet a given challenge. Teachers can impact student motivation in a positive manner that provides opportunities for communication, collaboration, creative, and critical thinking as follows (adapted from Fillman & Guthrie as cited in Allington, 2009, pp.155-156):

- Relate materials to their own lives;
- Listen to all opinions and voice their opinions as well;
- Encourage students to choose what they read (learn) much of the time;
- Allow students to finish if they are reading (or writing) something of self-interest;
- Help students to find their own ways of learning to read;
- Encourage students to talk with others about what they are reading and writing; and
- Ask students questions that require them to think critically and creatively.

The most powerful way to engage students in reading, foster voluntary reading, and promote high level thinking is to provide easy access to an assortment of interesting and appropriately difficult text in a variety of formats, including audio and digital. In addition, teachers and school librarians must provide opportunities to choose some of the books that will yield “high-success reading experiences are characterized by accurate, fluent reading with good understanding of the text that was read” (Allington, 2006, p. 98).

Effective teachers:

- Model literacy and self-efficacy in the classroom (McTigue et al., 2009);
- Observe all students carefully to know which struggle with engaging in academic activities (Kelley & Clausen-Grace, 2009);
- Employ a predictable classroom structure that includes built-in written and oral responses to help students remain engaged in learning (Kelly & Clausen-Grace, 2009);
- Provide students with desirable reading materials for independent reading, and encourage students to set goals with specificity, proximity, and difficulty in mind (McTigue et al., 2009); and
- Provide specific and accurate feedback that emphasizes student effort (McTigue et al., 2009).

In addition to many experiences with reading, students should have opportunities to write as an integral part of literacy instruction. Given the importance of writing as a means of helping students become critical and creative thinkers, the following sample activities are suggested.

- Provide opportunities for students to reflect in writing before discussing. Lemov (2010) described the technique of “Everybody Writes” in which all students respond



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- to a question by reflecting in writing; they then use those reflections as the class participates in a discussion.
- Metacognitive logs and double entry journals are used to support students in taking notes (what they see or read) and making notes (interpreting what they have seen or read).
 - Quick writes are used to increase writing fluency and activate thinking.
 - Graphic organizers are a visual display that demonstrate relationships between facts, concepts, or ideas. A graphic organizer guides the learner's thinking as they fill in and build upon a visual map or diagram.
 - Structured note taking helps students take notes more effectively and assists them in recalling and retaining information that is essential.
 - Marking text is an active reading strategy that asks students to identify information in the text that is relevant to the reading purpose.
 - Readers' strategies list
 - RAFT Writing Strategy
 - Response journals provide learners with an opportunity to record their personal thoughts, emotions, ideas, questions, reflections, connections, and new learning on what they hear, view, read, write, discuss, and think. See this article for more information.
 - Summarizing teaches students how to discern the most important ideas in a text, how to ignore relevant information, and how to integrate the central ideas in a meaningful way.
 - Digital storytelling is the practice of combining narrative with digital content, including images, sound, and video, to create a short movie.
 - Online writing, such as blogs and class websites, are regularly updated websites or web pages, typically run by an individual or small group, that are written in an informal or conversational style.

Grades 6-12

Research on adolescent literacy suggests that readers must be actively involved in reading (Hayes-Jacobs, 2006; Schoenbach, Greenleaf, & Murphy, 2012). Without engagement and active participation, students will learn and retain little. According to Schoenbach, Greenleaf, and Murphy (2012, p. 19):

“Reading is not a straightforward process of lifting the words off the page. It is a complex process of problem solving in which the reader works to make sense of a text not just from the words and sentences on the page but from the ideas, memories, and knowledge evoked by those words and sentences.”

Reading in secondary classrooms should be interactive, engaging students on both a social and personal dimension, whether discussions occur in the classroom or in online web-based discussions. Motivated readers set reading purposes and goals, take stances as readers, acknowledge their personal connections, and respond to texts and situations (Schoenbach et



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al., 2012). Understanding that reading occurs on a continuum and that some readers may be good at one type of reading, and not as good at another type of reading, enables students to see themselves as “readers” and to tolerate their frustration by recognizing and building upon their reading strengths (Shoenbach et al., 2012). In classrooms that support academic literacy, student engagement, and the 4 Cs:

- Teachers model reading and thinking strategies with text (think-alouds, talking to the text, good reader strategies list).
- Teachers provide students with opportunities to work through difficult text using a variety of strategies.
- Classroom routines revolve around collaborative problem solving and dialogue about texts in a socially safe and supported environment.
- Students of all levels have opportunities for success.

Many of the ideas mentioned above in the Grades K-5 section (p. 98) about embedding writing into instruction are also appropriate at the secondary level. Moreover, at the secondary level, students must have experiences in all the disciplines to experience the 4Cs of communication, collaboration, creative, and critical thinking. Specific ideas for each of the academic disciplines are provided in Essential Element 6.