Compelling Evidence Supports Creative Teaching Strategies

Creativity Matters

Education researchers and thought leaders tell us that new and more effective teaching strategies infuse creativity. Educational leaders and practitioners tell us that teachers need creativity to approach teaching and learning differently, to improve opportunities and outcomes for every student. Creative leadership, capacity, and confidence are essential components in transforming schools for every stakeholder.

For decades Crayola has been a thought leader, developing and delivering creative experiences across the curriculum. The Crayola Education division has been developing innovative professional learning experiences that have been tested through many partnerships. This includes collaborations with the President's Committee on Arts and Humanities Turnaround Arts Initiative and the National Association of Elementary School Principals. These programs and materials continue to receive positive feedback as teacher leaders learn how to coach colleagues and drive a school-wide vision that supports student achievement.

At the request of school leaders and teachers, Crayola Education continues to expand these professional learning programs. With a focus on integrating creativity, inquiry, design thinking, and collaboration into the learning environment—across the curriculum and across grade spans—Crayola Education empowers teacher leaders. Together these approaches can ignite school-wide creative, collaborative learning.

The program's focus is on transformative change, project-based and inquiry-based learning, and creative leadership as central. Research-based, this program builds upon insights from leading innovators as a launching pad. From studies supporting the value of art-infused education to research on the role of collaborative creative leadership in school transformation, Crayola professional learning program developers leveraged the approaches and models that research has shown to be most impactful.

This Executive Summary highlights the compelling evidence that supports this approach to transformative professional learning. Inside the full white paper, you will find additional citations and summaries that support the program's approaches and goal of making learning deeper and more engaging for students and helping educators build valuable capacity, creativity, and confidence.

Research and analysis covered in this Executive Summary support these key creatED program impact areas:

1. Improved student engagement, motivation, and academic achievement.

Across all disciplines and grades, research shows that a continued, pronounced emphasis on the value of the art-infused education helps students make sense of their world, make connections between disparate ideas, and make connections between the self and others. (Charleroy et al., 2012. Child development and arts education: A review of recent research and best practices)

2. Deep content learning and building valuable cognitive and interpersonal skills.

Well-designed inquiry- and project-based learning has been shown to be effective in teaching both content information and related skills, with students demonstrating greater gains in content knowledge than students who were taught with traditional methods. (Holm, 2011)

Additional benefits of project- and inquiry-based learning include improved attendance, self-reliance, and attitudes toward learning. (Condliffe et al., 2016). Another study notes that design-based learning supports deep engagement when students are asked to design and create an artifact that requires understanding and application of knowledge. (Barron and Darling-Hammond, 2008)

3. Making meaning through art and design thinking.

When teachers, as adult learners, express their thinking visually, learning outcomes improve. Similarly, as students learn to make their thinking visible, reading comprehension and content learning progress. Integrating art into other subject areas has been shown to enhance students' abilities to learn new concepts and communicate their ideas more fully. (Charleroy et al., 2012)

4. Building creative leadership to transform teaching and learning.

Introducing and sustaining new kinds of effective learning "… fundamentally depends on creativity…" state researchers, Louise Stoll and Julie Temperley (2009). Research further supports the concept that school improvement efforts can drive positive change successfully when they are planned and implemented systematically and school-wide. (Fullan, 2015)

5. Collaborative strategies to develop teacher leaders into coaches and build capacity.

The Crayola professional learning model emphasizes development and support of teacher leaders, provides unique coaching protocols, and enables the teacher leader participants to coach colleagues to make positive changes schoolwide. The research of Poekert (2013)

identifies open-mindedness, respect for other viewpoints, and "optimism and enthusiasm, confidence and decisiveness" as key characteristics of teacher leaders. The Crayola professional learning program also focuses on a "growth mindset," a factor that contributes to teacher leaders' success. (Dweck, 2010)

This program helps build teacher capacity through job-embedded professional development, which includes peer coaching, collaboration and creative teaching strategies. (Fullan, 2015) Creativity is shown to play a key role in school change and is a recognized practice across several transformation school leadership models. (Leithwood and Sun, 2012)

6. Reimagined professional learning that celebrates educators strengths.

The work of Darling-Hammond et al. (2009) and Desimone (2011) underscores the key characteristics of effective professional learning. These include:

- Sustained, job-embedded professional learning approaches
- Alignment with school-wide improvement initiatives
- Strong connections to classroom practice
- Active learning models
- Focus on teaching and learning across the curriculum
- Collaboration and concentration on building professional learning communities

Additional Research of Note:

Barron, B., & Darling-Hammond, L. (2008). **How can we teach for meaningful learning?** In L. Darling-Hammond, B. Barron, P. D. Pearson, A. H. Schoenfeld, E. K. Stage, T. D. Zimmerman, G. N. Cervetti, & J. L. Tilson, *Powerful learning: What we know about teaching for understanding* (pp. 11–70). San Francisco, CA: John Wiley & Sons. According to Barron and Darling-Hammond, "small group inquiry approaches, including project-based learning, design-based learning, and problem-based learning, can be extremely powerful for learning." "In order for students to gain vital media literacies, critical thinking skills, systems thinking, and interpersonal and self-directional skills, such skills need to be developed in the context of complex, meaningful projects that require sustained engagement, collaboration, research, management of resources, and development of an ambitious performance or product." Barron & Darling-Hammond cite the value of design-based learning, an approach that is based on the idea that children learn deeply when they are asked to design and create an artifact that requires understanding and application of knowledge.

Catterall, J. & Peppler, K. (2007). **Learning in the visual arts and the worldviews of young children**. *Cambridge Journal of Education*, 37(4), 543. Findings from this study of 103 inner city 9-year-olds in two major US cities: The arts students made significant comparative gains on a self-efficacy scale and on an "originality" subscale of a standard creativity test. These effects are attributed to children's engagement in art and to the social organization of instruction including reinforcing peer and student-adult relationships. Relationships between self-efficacy beliefs and tendencies to think originally are explored.

Catterall, J. S. (2009). *Doing Well and Doing Good by Doing Art: The effects of education in the visual and performing arts on the achievements and values of young adults*. Los Angeles/London: Imagination Group/I-Group Books. Insights from this book: Socially and economically disadvantaged children who have high levels of arts engagement or arts learning show more positive outcomes in a variety of areas than their low-arts-engaged peers. At-risk teenagers with a history of intensive arts experiences show achievement levels closer to, and in some cases exceeding, the levels shown by the general population studied.

Catterall, J. S., Dumais, S. A., & Hampden-Thompson, G. (2012, March). *The arts and achievement in at-risk youth: Findings from four longitudinal studies*. Research report #55. National Endowment for the Arts. https://www.arts.gov/sites/default/files/Arts-At-Risk-Youth.pdf.

Charleroy, A., Frederiksen, J. A. G., Jensen, A., McKenna, S., & Thomas, A. (2012). *Child development and arts education: A review of recent research and best practices*. New York: The College Board. Conclusion cited from Charleroy et al. (2012): Throughout all disciplines and grade bands, the research found a continued, pronounced emphasis on the value of the arts in helping students to make sense of their world, make connections between disparate ideas, and make connections between the self and others. Charleroy et al. (2012) also address the value of art integration in helping elementary students visualize content in other subject areas: "There is evidence that integrating art into other subject areas, including science, can enhance students' abilities to learn new concepts, and pictorial representation techniques in these subjects may effectively be used to communicate their ideas more fully. In these scenarios, student drawings can contribute directly to learning, rather than being an extension activity."

Darling-Hammond, L., et al. (2009). **Professional learning in the learning profession: A status report on teacher development in the United States and abroad**. *National Staff Development Council*. This article considered teacher coaching from well-regarded veteran educators a "promising practice," Authors noted that while much is unknown about "the conditions under which [coaching is] most like to be effective, they interpret evidence to suggest that "coaching may need to be embedded in broader efforts to build professional knowledge if it is to be most useful." The authors also note that "[w]hen all teachers in a school learn together, all students in the school benefit" and assert that PD should "align with school improvement priorities and goals."

De Koning, B. B., & van der Schoot, M. (2013). **Becoming part of the story! Refueling the interest in visualization strategies for reading comprehension**. *Educational Psychology Review*, 25(2), 261–287. De Koning reports: Helping readers in trying to better understand text by drawing upon visualization likely involves stimulating readers to activate perceptual and/or motor experiences stored in long-term memory that are relevant to the events described in the text. He clarifies: cognitive or psychological processes are influenced and shaped by the body including body morphology, sensory systems, and motor systems as well as the body's interaction with the surrounding world. That is, cognitive processes are grounded in the same neural systems that govern direct perception and action. It follows that perceptual and action-related processes are tightly linked to each other as well as to higher-order cognitive processes such as language. Students who receive training in how to mentally visualize a text in general show positive findings across school levels (i.e., elementary, middle, high school, college). More specifically, this enhances their ability to recall information, make inferences and predictions, and monitor their understanding.

Desimone, L.M. (2011). **A primer on effective professional development**. Phi Delta Kappan 92(6). Reprinted in Must-Reads from Kappan, 2010-2011/ Summer Issue #1. The author recommends that [w]hat teachers learn in any professional development activity should be consistent with other professional development, with their knowledge and beliefs, and with school, district, and state reforms and policies."

Elpus, K. (2013). *Arts education and positive youth development: Cognitive, behavioral, and social outcomes of adolescents who study the arts*. National Endowment for the Arts. Available from https://www.arts.gov/sites/default/files/Research-Art-Works-Maryland.pdf.

Hanna, G., Patterson, M., Rollins, J., & Sherman, A. (2011, November). *The arts and human development: Framing a national research agenda for the arts, lifelong learning, and individual well-being*. A white paper based on "The Arts and Human Development: Learning across the Lifespan," a convening by the National Endowment for the Arts in partnership with the U.S. Department of Health and Human Services, March 14, 2011, Washington, DC. Washington, DC: National Endowment for the Arts. Accessed Aug. 15, 2016 from https://www.arts.gov/sites/default/files/TheArtsAndHumanDev.pdf.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge. Findings from Hattie include: Concept mapping involves the development of graphical representation of the conceptual structure of the content to be learnt. It can assist in synthesizing and identifying the major ideas, themes, and interrelationships—particularly for the learners who do not have these organizing and synthesizing skills. The effects were highest with those students least likely to know the relationship between lower- and higher-order notions; that is, with lower rather than higher ability or highly verbal students.

creatED: A solution that drives creativity in schools

Using the research highlighted in this Executive Summary from the white paper, Transforming Schools with Creative Leadership and Innovative Teaching Strategies (IESD, 2016),* Crayola's creatED professional learning program includes:

- **Onsite Professional Development Workshops:** Two to three days each year of active, face-to-face training experiences for teacher leaders, coaches, administrators, and school improvement/transformation teams. Districts can engage in a multiyear comprehensive program with Crayola.

- **Remote Coaching:** Ongoing support and guidance for teacher leaders and coaches, through monthly webinars and a collaborative community focused on best practices.

- **Reflection and Classroom Application:** A dynamic online collection of resources to embed the vision and teaching strategies school-wide, including interactive exercises, project- and inquiry-based learning materials, and more, helping teachers build their creative capacity, reflect on promising practices, coach colleagues, and implement new ideas.

The program's focus is on transformative change, project- and inquiry-based learning, and creative leadership as central. Research-based, this program builds upon insights from leading innovators as a launching pad.

Additional Research of Note Continued:

Hetland, L., Winner, E., & Veenema, S. (2013). *Studio Thinking 2: The Real Benefits of Visual Arts Education* (rev. ed.). Teachers College Press. Studio Habits of Mind, cites observations of exemplary schools' art instruction and included but not limited to:
- *Engage and Persist*: Learning to embrace problems of relevance within the art world and/or of personal importance, to develop focus and other mental states conducive to working and persevering at art tasks.
- *Envision*: Learning to picture mentally what cannot be directly observed and imagine possible next steps in making a piece.
- *Express*: Learning to create works that convey an idea, a feeling, or a personal meaning.
- *Observe*: Learning to attend to visual contexts more closely than ordinary "looking" requires, and thereby to see things that otherwise might not be seen.
- *Reflect, Question and Explain*: Learning to think and talk with others about an aspect of one's work or working process.
- *Evaluate*: Learning to judge one's own work and working process, and the work of others in relation to standards of the field.
- *Stretch and Explore*: Learning to reach beyond one's capacities, to explore playfully without a preconceived plan, and to embrace the opportunity to learn from mistakes and accidents.

New York State Education Department Office of Bilingual Education and Foreign Languages Studies. (2010). *Art as a Tool for Teachers of English Language Learners*. Albany: The State Education Department/The University of the State of New York. Available from http://www.p12.nysed.gov/biling/docs/Art_as_a_Tool-for_Teachers.pdf

President's Committee on the Arts and the Humanities. (2011). *Reinvesting in arts education: Winning America's future through creative schools*. Washington, DC. The President's Committee on the Arts and the Humanities encourages further development of the field of arts integration through strengthening teacher preparation and professional development, targeting available arts funding, and setting up mechanisms for sharing ideas about arts integration through communities of practice. The report documents benefits of arts integration from studies done over the past decade and recent research using arts integration as the basis for several successful school reform initiatives. It cites studies that show significant links between arts integration models and academic and social outcomes for students, efficacy for teachers, and school-wide improvements in culture and climate—and that found arts integration is efficient, addressing a number of outcomes at the same time. Most important, the greatest gains in schools with arts integration are often seen school-wide and also with the most hard-to-reach and economically disadvantaged students.

President's Committee on the Arts and the Humanities. (2015, January). *Turnaround Arts Initiative: Final evaluation report*. Washington, DC. The pillars of the PCAH Turnaround Arts Initiative include: principal leadership, the strategic use of arts specialists, non-arts classroom teachers integrating arts into core content, the use of teaching artists and community organizations, the engagement of the district, parents, and community, strategic arts planning, professional development, and improvements to the school environment. The eight schools in the study for evidence of improved math (22.5%) and reading (12.6%) proficiency. These were higher rates of improvement than comparable School Improvement Grant schools that did not use art as a turnaround strategy. Additionally these schools had increased attendance rates (average was 91.7% in 2014) and reduced discipline—with 75% of teachers and administrators reporting reduced number of disturbances within the classrooms. The Turnaround Arts Initiative positively influenced engagement, with 70–100% of educators responding that the arts had helped increase parent, student, and teacher engagement in the school and in instruction.

Massie, M., Boran, K., & Wilhelm, J, D. (2008). The role visualization strategies play in struggling readers' engagement, comprehension, and response to text or "Wait. You mean it's supposed to make sense every time you read?" In J. Flood, S.B. Heath, & D. Lapp (eds.), *Handbook of research on teaching literacy through the communicative and visual arts*, Volume II: A project of the International Reading Association. Lawrence Erlbaum.

For more information and to download the complete white paper,
visit our website **www.crayola.com/educators**.

For a preview of Crayola's creatED professional learning program or to learn more, please contact a Crayola innovative teaching & learning manager at **professionalservices@crayola.com**.