STEAM & Project-Based Learning
Educators and Students Get Future-Ready
STEAM & PROJECT-BASED LEARNING: EDUCATORS & STUDENTS GET FUTURE-READY

EdWeek Webinar
May 30, 2018
Presenters

• **Cynthia Emerson**, principal, Vero Beach Elementary School, Indian River County School District, FL
• **Brad Foust**, fine arts supervisor, Bartlett City Schools, TN
• **Fred Primm**, consultant/retired superintendent, Bessemer City Schools, AL
• **Michelle Wheatfill**, assistant principal, Walter Bracken STEAM Academy, Clark County School District, NV

Moderator

• **Dominique Young**, Instructional Design and Professional Development Leader, Crayola
Agenda

• Preparing for our future
• Examples from the field
  • Walter Bracken STEAM Academy
  • Vero Beach Elementary
  • Bartlett City Schools
• Activating STEAM with Crayola
• Getting Started
Getting Future-Ready...

In this creative economy, students and educators need to be:

- Creatively Driven
- Problem Solvers
- Thought Leaders
Creativity in Teaching

Creativity in the classroom is one of the **top 5 reasons** why young teachers are inspired to teach.
<table>
<thead>
<tr>
<th>Level</th>
<th>Intervention</th>
<th>Assessment</th>
<th>Evaluation</th>
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<tbody>
<tr>
<td>P–12 Classroom</td>
<td>• Invite creative input &amp; thinking</td>
<td>• Integrate creativity in curriculum &amp; instruction</td>
<td>• Develop &amp; use formative assessments of creativity</td>
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<td></td>
<td>• Embed creativity into culture</td>
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<td>• Assess creative growth regularly</td>
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<td>• Share results with parents</td>
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<tr>
<td>School</td>
<td>• Embed creativity into school culture</td>
<td>• Develop a common vision for creativity</td>
<td>• Incorporate creativity into student portfolios</td>
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<td></td>
<td>• Design learning spaces for creativity</td>
<td>• Build staff capacity through PD</td>
<td>• Assess students’ creative growth</td>
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<tr>
<td>Out-of-School</td>
<td>• Evaluate creative opportunities beyond the classroom</td>
<td>• Integrate creativity into a variety of programs &amp; activities</td>
<td>• Encourage measurement of students’ creative growth</td>
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<tr>
<td>School District</td>
<td>• Evaluate how resources and learning spaces support creativity</td>
<td>• Provide PD &amp; resources to schools to grow creativity</td>
<td>• Develop &amp; support the use of quality creativity assessments</td>
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<tr>
<td>State</td>
<td>• Support the adoption of teaching practices &amp; learning environments that promote creativity</td>
<td>• Develop or provide PD &amp; curriculum that build teachers’ creative capacity</td>
<td>• Encourage using high quality creativity assessments at appropriate levels</td>
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Reimagining the Learning Environment

- Develop an Open and Growth Mindset
- Be Empowering
- Be a Champion
Workforce Shifts & the Gig Economy

• Emergence of the Gig Economy

• A labor market characterized by the prevalence of short-term contracts or freelance work as opposed to permanent jobs

• Widening Gap of wages between college degree workers and non-college degree workers

• Domination of newly created careers and innovation
Wage Gap

Experts predict there will be a shortage of about 1.5 million college graduates so employers will place a high premium on college graduates.

- 34.8% Four Year College Drop Out Rate
- 44.5% Two Year College Drop Out Rate
- 36.6% Four Year College Graduation Rate
- 29.1% Two Year College Graduation Rate

Innovation Boom

• 2 out of 3 elementary children are being trained for careers that have not been created
• Robots, Automation and Software will replace jobs once held by many blue collar workers

“My generation had it easy. We got to find a job. Our kids will have to invent a job.”

Thomas Friedman

Source: Study by the Software Company Intuit in 2010
What Do Our Students Need for the Future Workforce?

- Creativity
- Critical Thinking Skills
- Collaboration Skills
- Communication Skills
- Digital Citizenship
How can schools support the next generation of creative thinkers and problem solvers?
Examples from the Field
State Standardized Scores & Ratings

![Graph showing State Standardized Scores & Ratings from 2003 to 2017 for 3rd, 4th, and 5th grades.]

- Blue bars represent 3rd grade scores.
- Orange bars represent 4th grade scores.
- Gray bars represent 5th grade scores.
Awards

• 2013: Bracken Students place in top 10 of state for National Geography Bee
• 2013 - 2014: Magnet School of Distinction Award from MSA
• 2013: High Performing National Blue Ribbon School Award
• 2013: Katie Decker – Terrel H. Bell Award for Outstanding School Leadership
• 2013 – 2014: Students placed 1st-3rd in the MSA poster contest
• 2013 – 2015: Awarded Disney Musical grant from the Smith Center
• 2015: Congressional Record for Kathleen Decker
• 2015: Magnet School of Excellence Award from MSA
• 2015: Green Chips Sustainable Future Award
• 2017: MSA Certified School Demonstration Level
• 2017: MSA Top Magnet Elementary School
• 2017: National Title 1 Distinguished School Award
• 2017: Nevada Governor Designated STEM School Award
• 2018: Magnet School of Distinction Award
• 2015, 2016, 2017: Magnet School of Excellence Award

Achievements

• 2011 – 2014: Designated as a 5 star school – the top ranking in CCSD
• 2013: Highlighted on Inside Education (TV program for our innovative program)
• 2013 – 2015: Highlighted on KLAS News ‘What’s Cool at School’ for robotics, Starbase Nellis, and Gardening Programs
• 2013: Teams placed overall 3rd place in Science Olympiad
• 2013: International Technology Engineering Educators Association Program of Excellence
• 2013: National Blue Ribbon Selected for School Video Profile
• 2013: Students have placed at the Southern Nevada Regional Science Fair
• 2013 – 2015: Selected to share presentations at the MSA National Conference annually
• 2015: Edutopia filmed innovative Program for Schools that Work Series
STEAM
Engaging students with hands-on learning
Collaboration is KEY

Common Planning Period
Arts Integration Professional Development

Teacher Choice in Professional Development Increases Buy-In
Walter Long
STEAM Academy

Howard Hollingsworth
STEAM Academy
Vero Beach Elementary
Vero Beach Elementary

- 2016 – 2017 Economically Disadvantaged Rate - 90%
- 2016 – 2017 Minority Rate - 64%
- 97 students receive ELL services
- 112 students receive ESE services (4 gifted services)
- 358/271 Male to Female student ratio

<table>
<thead>
<tr>
<th>2015-2016 School Year</th>
<th>2016-2017 School Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Level</td>
<td>% Scoring 3 and above on FSA</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>5</td>
<td>29</td>
</tr>
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Project Based Learning Pilot Program at VBE

How were teachers selected?
Create buy-in with your leadership team and determine key players

How were students selected?
Will data be reliable and comparable?

What criteria were we looking for?
What will determine the success of our program?

What model did we utilize and training did we provide?
How did we ensure standards based instruction was a focus?
## Second Grade Pilot Data

Total Students - 33

- 30 Students Economically Disadvantaged
- 6 ELL Students
- 5 Students with a Disability
- 2 Gifted Students
- 16 Male/17 Female

- 56% entered more than 2 grade levels behind
- 0% exited this year more than 2 grade levels behind

- 24% entered on grade level
- 67% are now on grade level
5th Grade PBL Data

Total Students- 44

- 34 Economically Disadvantaged
- 5 ELL students (9 additional that just exited ELL programming)
- 5 Students with Disabilities
- 1 Gifted Student
- 23 Male/ 17 Female

- 56% Entered 2 or more grade levels behind
- 23% are currently more than 2 grade levels behind

- 17% entered on grade level
- 37% are currently on grade level
Designing Learning Spaces Based on Data
FIFTH GRADE ZEN ZONE
Designing Learning Spaces on Data
Second Grade BOOK NOOK
PBL Partnership with Vero Beach Museum of Arts
Bartlett City Schools
Arts Integration and STEAM
Measuring Impact - PDAE
PDAE Results - Students

94% of lessons exhibited active student learning.

Students in arts integration classrooms scored at or above the state composite average for language arts and math.

Levels of student engagement increased across a three-year period.
PDAE Results- Students

74% of teachers scored a level 4 or 5 on the district evaluation model.

78% of teachers produced significant growth in language arts and math scores.

64% of teachers grew to or maintained a level 5 composite score.
Measuring Impact - Portfolio

WORD BOX
Precipitation
Evaporation
Accumulation
Condensation

A. 
B. 
C. 
D. 

Point A Evidence

Point B Evidence
## Measuring Impact

### Rubric Indicator

<table>
<thead>
<tr>
<th>Arts Integration Type</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Teaching Tool, Topic, Thematic/Content, Conceptual, or Process)</td>
<td>Teaching Tool</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of Growth (1 to 5)</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Language Arts/Music Connection Level (1 to 5)</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Standards and Objectives (1 to 5)</th>
<th>3</th>
</tr>
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</table>

### Score Average

<table>
<thead>
<tr>
<th>Score Average</th>
<th>3</th>
</tr>
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</table>

### Comments:

Integration type identified as teaching tool as little is learned about music. Students used a song to learn the water cycle. A percentage of students progressed in knowing the steps of a water cycle and composing paragraph about the process. A opportunity in music composition could have been used as students could have written their own song instead of a paragraph. Students could have analyzed each other’s composition and given feedback of their musical works. There is no evidence of students understanding the connection of using music to learn the science concepts.
Portfolio Study Results

![Bar Chart]

- **Collection 1 Score Average**
  - Treatment: 3.5
  - Control: 3.0

- **Collection 2 Score Average**
  - Treatment: 4.0
  - Control: 2.5

**Legend**:
- Blue: Treatment
- Red: Control
Teacher Narrative

“I use music for many learning skills but had never had the students come up with their own song. I wasn’t sure what that would look like but in the end it was fun because it was so meaningful to them. As a kindergartner, it is important to be excited about and have positive feelings towards learning. I think this activity supported that! In asking the students what they thought about the process, they each expressed pride in their learning and felt it was fun.”

Kindergarten Teacher Journal Entry
Why Arts Integration/STEAM?
How Does Crayola Activate STEAM?

Catalyst for engaged learners

- **Art Integration**
  Develop students’ visualization skills through hands-on art activities.

- **Project-Based Learning**
  Engage with deep content inquiry and learning.

- **Design Thinking**
  Unpack the process of design thinking with and for students.

- **Student Leadership Development**
  Create opportunities for leadership for every learner.

- **Reflection**
  Practice planning and reflection, the skills of metacognition.
Building Creative Capacity

Planning → Team Building → Professional Learning → Coaching Support
Relevant Training Topics

- Creative Leadership
- Multiple Approaches to Literacy
- STEAM
What creatED Delivers

Engaging Professional Learning Program that helps build creative teaching & leadership strategies

School Observation + Program Evaluation Tools and Consulting

Online Community for Continued Support

Project Based Learning Resources for K-8 Students
Professional Development Options

**Light Launch**
- One Full Day PD Workshop
- Participant Reflection Journals
- Crayola Specialty Art Materials

**Bold & Bright**
- Two Full Day PD Workshops
- Virtual Coaching
- Additional Tools & Benefits

**Vigorous & Vibrant**
- Three Full Day PD Workshops
- Onsite Coaching
- Additional Tools & Benefits
Here’s a sample program experience as a creatED school at the Bold & Bright level

**START UP BEFORE YOUR 1ST PD DAY**
- Orientation
- PD Planning Session
- Faculty Pre-Survey

**ROLL OUT!**
- Your Coaches Deliver PD Day 1 Training to Your Faculty
- Classroom Application Begins
- Project-Based Learning Engages Students in Your Classrooms

**4-7 MONTHS**
- PD Evaluation Report
- Virtual Consultancy #2: Principal Guidance
- Post-Survey to All Faculty
- Virtual Consultancy #3: School Report & Year 2 Planning

**MOMENTUM BUILDS!**
- Your Coaches Deliver PD Day 2 Training to Your Faculty
- Project-Based Learning is Introduced into the Classroom

**1-2 MONTHS**
- PD Evaluation Report
- Virtual Consultancy #1: Redelivery Progress
- Full-Day Coaching

**CHOOSE & PLAN YEARS 2 & 3**
**YEAR 2**
- Design Thinking: Solving Real World Problems and Inventions
- Creating a Culturally Responsive Learning Environment
- Personal Identity Narratives

**YEAR 3**
- Crafting Courageous Conversations
- Bringing Nonfiction to Life
- Design Thinking: Interactions Between People & Places

Access to creatED Community
Panelists’ Advice about Getting Started

• Identify a theme
• Change the environment, add color, murals connected to content or areas of study
• Start a reading series program
• Add explorations classes, student choice on the STEAM theme
• Give teachers choice in professional development
• Align creative leadership approaches with continuous improvement and/or strategic plans
• Secure Stakeholder Buy-In
• Commit to the full process ... all the way to the end
A Special Announcement

Free Preview Training Session awarded to one webinar attendee from Crayola

For more information about creatED Professional Learning and our many other resources, programs, and products for educators, visit:

crayola.com/education
Thank You!