

## Guidelines and Resources for Nurturing Creativity

In *Out Think: How Innovative Leaders Drive Exceptional Outcomes*, Shawn Hunter (Wiley, 2013) defines creativity as the act of conceiving something original or unusual, while innovation is the implementation or creation of something new that has realized value to others. In recent years, the economy of the United States has been rapidly transformed into one that is driven by creativity and innovation. As a result, these are skills we cannot afford to undervalue in the classroom. Students who will have the greatest success in the future are those who can connect seemingly unrelated ideas, who recognize patterns in apparent disorder, who make meaning from that which at first appears meaningless, who see the big picture, and who know how to care, nurture, and empathize.

As educators prepare students for the future, it is critical to realize that students of today are being exposed to a constant stream of learning. They need to be able to learn, unlearn, and relearn, adapt, expand, and change how they understand what they encounter. This flexibility in learning requires creativity. Students preparing to join this innovation-driven, conceptual age must be given the space, time, and encouragement to develop creative thinking and innovative production.

<b>Effective Practices for Incorporating Creativity</b>	<b>Additional Guidelines</b>	<b>Internet Links and Digital Tools</b>
<p>There are <b>three components to creativity: creative thinking skills, expertise, and motivation</b>. Students need to have the opportunity to grow in each of these components in order to produce more creative work.</p>	<ul style="list-style-type: none"> <li>● Recognize that <b>creativity is a valuable skill that can be taught</b> and strengthened, not a trait or natural talent that students are born with. When we treat it as such, we begin to understand the central role that creativity should play in our students' everyday learning experiences.</li> <li>● <b>Creative thinking skills</b> require flexibility and imagination when approaching new problems. Creative thinkers are open and listen to other people's ideas. They are also comfortable disagreeing without being disagreeable. To support students as they develop skills that support their creativity, consider the following actions:             <ul style="list-style-type: none"> <li>○ Allow students to set aside some frustrating part of a project for a time and work on something else. They also need guidance in chunking their work so that small accomplishments can be celebrated as part of</li> </ul> </li> </ul>	<p><a href="#">22 Simple Ideas for Incorporating Creativity in the Elementary Classroom</a></p> <p><a href="#">30 Ways to Promote Creativity in Your Classroom</a></p> <p><a href="#">Criteria to Evaluate the Credibility of</a></p>

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	<p>the bigger project.</p> <ul style="list-style-type: none"> <li>○ Provide sentence starters for students to use when disagreeing with their peers:           <ul style="list-style-type: none"> <li>▪ “I hear what you are saying, but I wonder if you have looked at it this way...”</li> <li>▪ “I’m not sure that would work here and this is why...”</li> <li>▪ “I understand how you are seeing this, but have you considered this different perspective...”</li> </ul> </li> <li>○ Model brainstorming for students and have that be a regular practice in the classroom for generating solutions to problems.</li> <li>○ Model reflection for students and allow students time to ponder and play with their ideas.</li> <li>○ Challenge students to talk or write about their experiences in trying to find a creative solution to a problem.</li> <li>● <b>Expertise</b> for students is based partly on their experience, but it is bolstered by their research. They need to become emerging experts on their problem before they can find a creative solution. This requires some time spent on developing guided and effective research skills. For example, provide guidance on           <ul style="list-style-type: none"> <li>○ How to find credible sources,</li> <li>○ How to determine which sources are useful and which are not,</li> <li>○ How to read and highlight for main ideas,</li> <li>○ How to summarize what has been read,</li> <li>○ How to cite sources that have been used.</li> </ul> </li> <li>● <b>Motivation</b> for students can be tricky. Students tend to produce better work when they <b>care intrinsically about what they are doing</b>. Allowing students some autonomy to choose topics to study that they care about increases their motivation. In addition, allowing students to determine how they creatively</li> </ul>	<p><a href="#">WWW Resources</a></p> <p><a href="#">Finding Reliable Sources Video</a> (Elementary)</p> <p><a href="#">Finding Reliable Sources Using Google Video Lecture</a> (Part 1)</p> <p><a href="#">Finding Reliable Sources Using Google Video Lecture</a> (Part 2)</p> <p><a href="#">Summarizing Strategies</a></p> <p><a href="#">Comprehension and Summarizing Strategies</a></p>

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	<p>approach those topics can also increase their motivation.</p> <ul style="list-style-type: none"> <li>• Ideally, we want students to <b>experience “flow”</b> in their creative efforts. Students find flow when they are deeply absorbed in what they are doing, when time passes unnoticed, and when they experience significant satisfaction from their work. A student experiencing flow is motivated.</li> </ul>	
<p><b>Teachers</b> do not manage the creativity of their students, but rather <b>manage their classrooms to allow the creativity of their students to flourish.</b></p>	<ul style="list-style-type: none"> <li>• Foster a <b>creative classroom from the very first day</b> each school year where creativity is valued and discussed. For example, <ul style="list-style-type: none"> <li>○ Consider regularly showing the students’ excellent work outside the classroom at the library or other community space.</li> <li>○ Invite people from the community who use creativity in their work to speak to and engage with students.</li> </ul> </li> <li>• <b>Both convergent and divergent thinking</b> need to be part of the creative classroom experience for students. Standardized exams focus a great deal on convergent thinking where there is one best answer when comparing it against other options. Divergent thinking focuses more on a variety of best answers and approaches to solve a problem. <ul style="list-style-type: none"> <li>○ Tasks that inspire divergent thinking will do the following: <ul style="list-style-type: none"> <li>▪ Encourage students to tolerate ambiguity,</li> <li>▪ Consider novel concepts and approaches,</li> <li>▪ Sustain interest in endeavors of all kinds.</li> </ul> </li> <li>○ In the creative process, divergent thinking is valuable ti generates all sorts of ideas, Convergent thinking helps students narrow, refine and evaluate those ideas to determine a best solution.</li> </ul> </li> <li>• Consider incorporating tasks and assignments in the form of <b>creative challenges</b> that address and value the relationship between both convergent and divergent thinking. Creative challenges should not resemble the all too common convergent-inspired classroom tasks that are often seen as busy</li> </ul>	<p><a href="#">Creating a Collaborative Classroom</a></p> <p><a href="#">Diversity in the Classroom</a></p> <p><a href="#">Teaching Students with Different Learning Styles and Levels of Preparation</a></p> <p><a href="#">Odysseyofthemind.com</a></p> <p><a href="#">Thinkquest.org</a></p> <p><a href="#">Spicing Up Classrooms Using Creative Challenges - with samples</a></p>

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	<p>work. Creative challenges should include the following components:</p> <ul style="list-style-type: none"> <li>○ Inspire students to work collaboratively.</li> <li>○ Allow students to use their individual creative strengths.</li> <li>○ Communicate clear objectives based in learning standards.</li> <li>○ Invite students to focus on a problem and to determine what information is important.</li> <li>○ Inspire students to develop a plan using creative thinking skills and utilizing multiple resources.</li> <li>○ Encourage students to work flexibly and allow for mistakes in the process.</li> <li>○ Provide students with time for reflection.</li> </ul> <ul style="list-style-type: none"> <li>● Note that the greatest successes with students do not come from teachers assigning them specific tasks for completion, but rather <b>allowing students to generate their own ideas</b> about how to identify and then tackle a problem, or present a concept creatively. Students become more invested in their work when they have chosen how they want to accomplish it. Likewise, they become more emotionally connected to their work, which helps motivate them to care about what they are trying to accomplish.</li> <li>● Also recognize that there are different types of problem solvers. Most notably there are the <b>innovators and the adaptors</b>--the first of which tends to create something new, and the second tends to improve what already exists. There is a place for both types of problem solvers.</li> <li>● Researchers tend to think of <b>creativity as Big C and Little C</b> where <i>Big Creativity</i> drives societal change such as a new literary movement or immigration reform and <i>Little Creativity</i> addresses everyday issues and problems in need of creative solutions. <b>Both are important in the classroom:</b> <ul style="list-style-type: none"> <li>○ When implementing Big Creativity, consider having students research</li> </ul> </li> </ul>	<p><a href="#">Prezi - Spicing Up Your Classroom with Creative Challenges</a></p> <p><a href="#">Tinkerlab.com Creative Challenges</a></p> <p><a href="#">Collaboration Table from Kamm Solutions</a></p>

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	<p>and choose a cause that is important to them. Ask them to create a clear and detailed timeline and plan for a protest or celebration or awareness day with appropriate and informative propaganda.</p> <ul style="list-style-type: none"> <li>○ Little Creativity implementation works in all subject areas from building the tallest paper tower as a team to planning the menu and coordinating the purchasing of a Thanksgiving celebration.</li> <li>● <b>Teach students to collaborate.</b> What is important about creative activities is that students are not only individually engaged in learning something meaningful in the moment, but also that they work together to creatively solve a problem. <ul style="list-style-type: none"> <li>○ In groups they are better able to bounce ideas off of one another and think aloud as they problem solve and produce. Note that some students really do work better alone, so have <b>variety in student groupings</b> for assignments and activities.</li> <li>○ <b>Diversity</b> in the types of students who collaborate and the way they think and see the world is just as vital as using diverse texts and resources in order to increase creative production.</li> <li>○ Provide <b>clear directions</b> for how to effectively engage in collaborative work (see Kamm Solutions' Collaboration Table).</li> </ul> </li> <li>● In order to <b>coordinate students' thinking</b> and provide powerful emotional connections to their work and to each other, students need to be encouraged to not only create the prototypes or models or designs for their ideas but also create metaphors, analogies and stories surrounding their innovations.</li> <li>● It is important to <b>help students monitor their stress levels</b> in creative work. Too much stress will stifle creativity; too little will do the same. Part of the ongoing reflective process for students needs to be a stress check-in. <ul style="list-style-type: none"> <li>○ Students should have the opportunity to rate their stress level where 10 is overwhelmed and 1 is bored or disconnected. Somewhere in the</li> </ul> </li> </ul>	

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	<p>middle is optimal. Ask them to either say or write their stress level for a quick check-in. Allow students who are on either end of the spectrum to pause, reevaluate and even modify what they are currently doing.</p> <ul style="list-style-type: none"> <li>● <b>Establish a signal</b> for groups or individuals who are in need of teacher mediation or guidance. Resist the temptation to swoop in and calm the situation with a teacher solution. Ask students to follow effective collaboration guidelines including disagreeing without being disagreeable.</li> <li>● Built into the creative process should also be time to for students <b>to think</b> about what they learned, what was challenging, and what was rewarding.</li> <li>● Maintaining a <b>positive outlook</b> and a pleasant classroom space is the work of everyone in the room. Humor and playfulness keep things light and students open to new ideas. Such an atmosphere will help encourage creative inspiration and work.</li> </ul>	
<p><b>Teachers need to provide a framework for the creative process</b> that helps students focus their work, but avoids stifling their creativity.</p>	<ul style="list-style-type: none"> <li>● Students need to have <b>clear guidelines</b> for how they will be evaluated in the form of a <b>rubric</b> as well as a map for the stages of a creative project. <ul style="list-style-type: none"> <li>○ For example, with large creative projects, where students research and choose a cause that is important to them, there needs to be clear and detailed parameters in place (students must research a cause they care about using ten or more credible resources) and a product (create a plan, timeline, and propaganda to advertise a protest, celebration, or awareness day to present publicly). How the product actually looks, is up to the students. They need to determine what kind of propaganda to use, what cause is important to them, etc.</li> </ul> </li> <li>● Work with students to consider the following questions to determine if a project is viable in the time frame and space available for the project: <ul style="list-style-type: none"> <li>○ What processes are involved in the project?</li> <li>○ What tasks are involved in those processes?</li> </ul> </li> </ul>	<p><a href="#">Prezi for Osborn-Parnes Creative Model for Problem Solving</a></p> <p><a href="#">Creative Brain Model based on Osborn-Parnes</a></p> <p><a href="#">Creativity and Innovation Rubric Grades 6-12</a></p> <p><a href="#">Creativity and</a></p>

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	<ul style="list-style-type: none"> <li>○ What are the skill sets needed to accomplish the tasks?</li> <li>○ What technological support is needed?</li> <li>○ What texts and resources are useful?</li> <li>○ What support and clarification should the teacher provide?</li> <li>● Consider using the <b>Osborn-Parnes model for creativity and innovation</b> in helping students develop their creative and innovative skills. How this model works in individual classrooms will vary, but teachers need to consider how they can provide the space and time for students to work through each of the following six steps in the creative process:             <ul style="list-style-type: none"> <li>○ <i>Mess-Finding</i> is the process of identifying goals or objectives related to a problem that is in need of a solution.</li> <li>○ <i>Fact-finding</i> is the research process where students gather all sorts of data about their problems.</li> <li>○ <i>Problem-finding</i> is the clarification process where students hone and refine their problem or issue based on what they learned in their research.</li> <li>○ <i>Idea-finding</i> is where students generate ideas about how they might solve the problem.</li> <li>○ <i>Solution-finding</i> is where students evaluate and strengthen the ideas they have generated.</li> <li>○ <i>Acceptance-finding</i> is where students create a plan of action and implementation for their solution to their problem.</li> </ul> </li> <li>● Built into the creative process should also be <b>time to for students to reflect</b> about what they learned, how they learned it, what was challenging, and what was rewarding. This can be written as well as discussed, but it is a vital part of learning.</li> <li>● Create an environment where <b>there is room for failure</b>. Creative processes do not always yield awesome outcomes and students need to be able to fail</li> </ul>	<p><a href="#">Innovation Rubric Grades 3-5</a></p> <p><a href="#">Creativity and Innovation Rubric Grades K-2</a></p>

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	<p>without losing their integrity or becoming discouraged. They need to understand the value of failure, but not focus too intently on their failures. Teachers need to help students focus on a variety of good ideas rather than the one bad idea that just wouldn't work.</p>	
<p>Using <b>problem-based learning</b> scenarios provides ample opportunity for students to employ innovation in the classroom.</p>	<ul style="list-style-type: none"> <li>● Problem-based learning was essentially created to allow students to address “Ill-structured” problems, or problems that do not have a tidy, convergent answer.</li> <li>● Many ill-structured problems are found in <b>real-world contexts</b> and, therefore, not only have a relevance to students’ experience, but provide ample opportunities for students to apply and develop creative skills and innovative solutions.</li> <li>● Students who engage in problem-based learning are asked to <b>solve real-world problems</b> by determining a question, designing their plan of action, and organizing their research. Students will produce some sort of artifact, as a result of the project, that is intended for a specific audience.</li> <li>● Students work in multiple content areas and disciplines and generally follow these steps in problem-based learning: <ul style="list-style-type: none"> <li>○ Students explore the issue. They gather information on the issue.</li> <li>○ Students determine what they know, or what is known about the issue based on the information they have gathered.</li> <li>○ Students define the issue or the specific problem. They determine what they hope to learn about the problem and establish their research questions.</li> <li>○ Students then research and find the answers to their questions that might make a compelling argument or an event, or help produce a solution, a system, or product.</li> </ul> </li> </ul>	<p><a href="#">12 Timeless Project-Based Learning Resources</a></p> <p><a href="#">Problem-based Learning; As Authentic As It Gets</a></p> <p><a href="#">Problem-based Learning Activities</a></p> <p><a href="#">Problem-based Learning Tips and Project Ideas</a></p> <p><a href="#">Innovative Practice: 5 Strategies for the Early Learning Classroom</a></p> <p><a href="#">What You Need to Be an Innovative Educator</a></p>

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	<ul style="list-style-type: none"> <li>○ Students then investigate those possible solutions to determine which is the most viable or practical.</li> <li>○ Students then present, create, plan, execute, etc., their solution in the form of some sort of artifact.</li> <li>○ Finally, students evaluate themselves and their experience.</li> <li>● Consider asking students to brainstorm what problems their community faces. Be prepared with articles, videos, or ideas to help prompt this discussion, but include all ideas that students share in the brainstorming process. Ask them to narrow some of their suggestions and to research these problems further in their community and other communities that face similar challenges.</li> <li>● It is invaluable to have members of the community who can identify specific problems speak with your students. Consider asking city council members, school board members, superintendents, and other city or community leaders to visit your classroom.</li> <li>● <b>Less complex but still relevant problems</b> are also excellent ways to help students utilize innovation. Below are some examples of these types of problems: <ul style="list-style-type: none"> <li>○ Give students a few supplies and ask them to create a simple machine that can perform a simple, but purposeful task.</li> <li>○ Ask students to develop a new design for a shoe (or other product) that is best suited for a certain activity (playing on the playground, going from the beach to the water and back again, hiking in the desert, etc.).</li> <li>○ Challenge students to identify and streamline a classroom procedure or daily task in their own lives.</li> </ul> </li> <li>● A final note about problem-based learning is that using a <b>cross-curricular approach</b> for certain projects and assignments will serve the students well as they see the various subjects they are studying integrated and lending value to</li> </ul>	

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	each other.	
<p>The <b>classroom space and appearance</b> are important in encouraging creativity and innovation in students.</p>	<ul style="list-style-type: none"> <li>● Research has determined that there is such a thing as an <b>optimum classroom environment</b> that ignites creativity in students. Not all the variables of such a classroom are achievable by all teachers and students, but a review of these variables may help teachers establish a more inspiring space in which students work:               <ul style="list-style-type: none"> <li>○ Use <b>natural lighting</b> whenever possible and find alternatives for the traditional fatigue and hyperactivity-inducing fluorescent lights.</li> <li>○ If possible, consider <b>painting the classroom walls</b> a light yellow-orange, or a light green, or even a blue-green as they are each colors that have been determined to inspire students.</li> <li>○ Decorate the walls with <b>cue-rich visual aides</b>. Include inspiring and content-relevant art and other visually stimulating pieces.</li> <li>○ Have space for student work to be displayed. Specifically, have a space to <b>display students' work</b> that is especially creative in solving a problem or presenting an idea. Reinforce creative practices by lauding them.</li> <li>○ If possible, consider more <b>interesting and functional furniture</b> than the traditional plastic and wood desks and chairs. Classrooms that inspire creativity may have a few different seating spaces and arrangements, or different sorts of tables. These variants should be safe and functional, but also visually appealing.</li> <li>○ Most importantly, students need access to <b>resources that inspire creativity</b>. These resources need to be a fluid part of the daily interactions in the classroom. Consider having an invention center made up of recycled goods, a junk box, or tech box full of odds and ends that may all serve to inspire creative thinking in any age student.</li> </ul> </li> </ul>	<p><a href="#">Basic Classroom Environment Checklist from Erikson Online</a></p> <p><a href="#">Classroom Beautiful--DIY from nea.org</a></p> <p><a href="#">Using Music in The Elementary Classroom from Edutopia</a></p> <p><a href="#">Classroom Music: 19 Playlists from 8tracks.com</a></p> <p><a href="#">85 Positive Songs for Teachers to Use in the Classroom, with links</a></p>

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	<ul style="list-style-type: none"> <li>○ <b>Keep the classroom comfortably cool</b>, rather than warm and <b>play appropriate and inspiring music</b> at the right times to avoid sluggishness and bolster creativity.</li> <li>○ It is desirable to have <b>open space</b> in the classroom where students can confer and work together. While crowded rooms provide few options for open space, consider desks or tables that can be easily moved to create open space.</li> </ul>	
<p><b>Teacher collaboration</b> helps teachers to gain new knowledge and to interweave creativity into their everyday classroom learning tasks.</p>	<ul style="list-style-type: none"> <li>● Teachers need to be encouraged and supported in their efforts to <b>collaborate and lead</b> in professional learning communities within and beyond their schools in order to increase the depth of their knowledge with respect to employing creativity in the classroom.</li> <li>● Likewise, teachers should be encouraged to work together on <b>cross-curricular projects and activities</b>. So much can be gained when multiple disciplines are applied to problem solving in the classroom.</li> <li>● Teachers must learn from each other how to move students away from the “just show me what to do” mentality.</li> <li>● Becoming a creative leader is not just about solving problems; rather, it is also about identifying problems that require one to look at things from a unique perspective. Teachers need time and support from their peers in their efforts to learn how to be creative leaders in their classrooms.</li> </ul>	<p><a href="#">Teaching Creativity-Professional Development</a></p> <p><a href="#">The Power of Teacher Collaboration</a></p> <p><a href="#">Teacher Collaboration Strategies</a></p> <p><a href="#">The Benefits of Teacher Collaboration</a></p>

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