Educators are continually faced with new challenges to keep up with latest research findings as well as initiatives that hold promise to improve learning and help students prepare for their futures. Some ideas are not necessarily new but have been repackaged under different headings. For example, critical thinking and problem solving have seen a new resurgence in recent years, but in actuality the ideas have been around for decades. What is new, however, is the heightened attention that selected concepts have experienced in recent years. According to Educational Leadership, “A growing number of business leaders, politicians, and educators are united around the idea that students need ‘21st century skills’ to be successful today.” The demand being placed on teachers is to find ways to incorporate these identified skills in their lessons so that students have an adequate amount of time to practice and master these skills in the course of their daily routines. Thus, as practitioners we need a deeper understanding of exactly how to proceed.

We begin with a definition of 21st century skills provided by the Glossary of Educational Reform. “The term...refers to a broad set of knowledge, skills, work habits, and character traits that are believed – by educators, school reformers, college professors, employees, and others – to be critically important to success in today’s world, particularly in collegiate programs and contemporary careers and workplaces.” An exploration of what constitutes a 21st century skill elicits lists that seem broad and endless as well as other itemizations that are more concise and to the point. If we are truly going to make a difference, we cannot overwhelm ourselves by taking on another daunting task with a limitless number of options. We have to deal with the challenge in a reasonable and sensible manner. To help provide focus on what teachers can do to promote 21st century skills, I have culled the list down to the skills below:

- critical thinking
- problem solving
- creativity and innovation
- adaptability
- collaboration
- communication (both written and oral)
- self-direction and self-assessment
- application of technology to work flow
Sarah Brown Wessling of the Teaching Channel has clarified the charge that has been placed on educators in the following way: “Twenty-first century learning embodies an approach to teaching that marries content to skill. Without skills, students are left to memorize facts, recall details for worksheets, and relegate their educational experience to passivity. Without content, students may engage in problem-solving or team-working experiences that fall into triviality, into relevance without rigor. Instead, the 21st century learning paradigm offers an opportunity to synthesize the margins of the content vs. skills debate and bring it into a framework that dispels these dichotomies.” Thus, skills are not taught in an isolated or haphazard manner but instead are incorporated into content in meaningful ways that allow students to build upon their skill development.

What steps can we take to incorporate 21st century skills into our content-based instructional programs?

A good place to start is to determine, in collaboration with colleagues, when students will work on which skills, whether the time period under consideration is an entire year or a specific unit. Once that timing and sequencing is established:

- It is important that we explain each skill, and perhaps let students discuss with their peers what it will look like and sound like when the skill is being practiced or learned.
- Because skill development happens over time, it is an on-going process. Whenever students are working on skill development, we need to be explicit about which skill or skills are being addressed.
- Knowing how and whether students are improving their skills requires continuous monitoring, providing groups and individuals feedback, and allowing students to reflect on their progress in writing or through conversations.

We have to constantly be on the lookout for ways to update strategies already in our repertoires and for additional strategies to use that allow students to practice and demonstrate 21st century skills. Below you will see an array of approaches teachers can use as they work with their classes. The sources are varied; some I have seen being implemented, some I have discovered on the Internet, and others have been shared with me at workshops.

**Three Ws** - At the end of a lesson or class period, students are asked to either write or discuss the topic under study by responding to three questions:

- **What** did we learn today?
- **So What?** (What is its relevancy, importance or usefulness?)
- **Now What?** (How does this fit into what we are learning? Does it affect our thinking? Can we predict where we are going?)

**Rise and Shine** - In a twitter-like context, students are asked to capture the essence of the significant points of the day’s lesson in 140 words or less. Students may collaborate or work independently. When selected student are ready, they individually stand up and share their summary with their classmates.

**He Said... She Said** - This is a way for groups of students to share creative ideas with their fellow students. In groups of four, students are given a task, problem to solve, reaction to a situation, prediction of a next step, etc. Each student jots down his or her answer or opinion and then each group member shares his or her idea with the entire group. When the time comes for groups to share their best thinking, individual group members can point to a fellow student to share his or her thinking because that person’s idea was the best response. In short, he said or she said it best.
TED Talk - TED stands for Technology, Entertainment, Design. TED talks are 18-minute presentations based on the concept of “ideas worth sharing.” An innovative way to use this strategy in the classroom is to have students present TED talks to their fellow students. The time for the talk may be limited (perhaps five minutes) during which students can volunteer to share their thinking with their classmates. The strategy may be used as a type of assessment giving students the option of writing and delivering (or filming themselves for a You Tube video) a TED talk in lieu of a more traditional assessment.

Cs the Moment - Simply stated, there are a lot of Cs impacting the lives and thinking of our students. Some of the Cs that are in current educational literature include critical thinking (and doing), creativity, collaboration, cross-cultural understanding, communication, computing, career and learning self-reliance, and collective knowledge. With a profusion of so many ideas, it can be productive for students to pause periodically and reflect on a “C” which many writers and prognosticators feel are lifelong skills. Teachers may choose to have the students self-assess periodically (perhaps quarterly), or ask students to reflect on a specific skill that the class has been working on (such as communication or collaboration). Teachers can allow students time to reflect by responding to selected questions:

- Which Cs represent my strengths?
- Which Cs are areas I need to work on in the future?
- Which Cs do I feel are the most important in my future life?
- What evidence do I have to show that I am improving on a specific skill?

The students can then do a piece of writing in which they reflect on where they see themselves in relation to the skill(s), or participate in a group discussion to clarify how the skill(s) will impact their futures.

Drop the Mic - The title has become popularized in videos or on television when individuals complete a spectacular performance or deliver a definitive or remarkable statement. In a classroom, students may be challenged by their teacher to capture the essence of an idea, put together a concise understanding of a subject, develop a creative approach to capture an idea under study, or summarize a complicated subject in a concise way. After students have had a chance to devise their oral remarks, the teacher hands the student a plastic microphone. Each participant makes a presentation at the conclusion of which he or she “drops the mic.” Classmates are invited to show their approval through applause or cheers.

Trial Balloon - A trial balloon is a statement made to see how a new policy or idea will be received. In classrooms, students study a wide variety of concepts, historical events, scientific possibilities, mathematical processes, technological advances, and a variety of literary approaches. Important discoveries are made when individuals are allowed to pause and determine what may be the next step in an experiment, an event, or a story. Using the strategy students are asked to make guesses, estimates, approximations, etc., as they study new content by floating a “trial balloon,” which is then followed by a class discussion to determine the validity or possibility of the ideas being presented.

The questions that students may consider are truly limitless. The importance of the strategy is to allow students to problem solve, be as creative as they wish, and to think more deeply about technological impacts on a broad scale.

The Write Stuff - Writing is a form of thinking, and one of teaching’s most important goals to cause students to think more deeply. To accomplish this goal, students need opportunities to write in a variety of academic settings including classes where they might not typically be required to write. When students
write, they gather their thoughts, self-assess what they have learned, and determine what skills they still have to work on in the future. Writings may occur occasionally in an informal manner or as an on-going practice in a journal. Teachers do not need to assess many writings when the purpose is for personal reflection and to allow students to determine when and how they are improving in their skill development.

“Assessorize” - Sometimes students are frustrated because they have learned things during a unit’s study but they are never asked about this information on a formal assessment. It is important for any and all assessments teachers devise to be standards-based. But assessments cannot address everything that was taught during a particular unit. When teachers give their students a chance to share information/details/ideas/real life applications that the students remember from a unit but were not “on the test,” they feel valued. Much like we accessorize our outfits with personal choices, students can accessorize their assessments by sharing their personal learning.

Pulling It Together - Educator James Lang provides teachers with strategies to implement during the last five minutes of class. Closing the Loop has the students return to the initial essential question(s) for the day’s lesson and asks them whether their thoughts on the content were “confirmed, enhanced, or contradicted what they knew before.” A second strategy is Closing Connections during which students are asked to identify five ways the day’s material appears in context outside the classroom such as in current events, personal experiences or popular culture. Such summarizers enable students to think more broadly about the lesson’s content in both critical and creative ways.

In the Voice of…. - Students need only to look at the success of a show like “Hamilton” to see how creativity can strike a universal nerve. Student thinking and imagination can be expanded when students consider how a person they have studied might react to different or new situations from their perspective or point of view. For example, students might be asked to explain

• how a character from a novel or short story might react to a specific current event
• how a historical figure might respond to a modern day phenomenon;
• how a TV/movie/music personality might react if they lived in a different time and place.

The possibilities are endless. What is important is that as the student writes or presents, he or she remains true to the personality, beliefs and character of the person whose ”voice” they are representing in their creative work.

The Most … - Prior to an assessment, the teacher informs the students that the assessment will be non-traditional. Students are informed that they will be expected to respond to a series of open-ended statements about the content they have studied. The students are given sentence starters so that they can be prepared to write when they arrive in class. Examples of sentence starters are:

• The most interesting thing I remember….
• The most important ideas I learned…
• The most useful information was…
• The most unusual thing that inspired my creativity was…
• The most surprising piece of information was…
• The most unforgettable class was…
• The most important idea that caused me to really think more deeply was…
• The most essential idea that caused me change my thinking was…

The students should also be prepared to defend their choices for the completion of each statement.
Sign on the Dotted Line - Originally shared by a second grade teacher from West Irondequoit Central School District in New York, and called **How I’ll Show You What I Know**, this strategy provides choice for students in demonstrating their learning through the use of a signed contract or a “contractual obligation.” Contracts should be matched to the age of the student so younger students are given age-appropriate choices and are not given over-complicated contracts and older students are not given contracts which are simplistic and unchallenging. The contract might look like the one below which is adapted from *Instruction for All Students*:

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**How I’ll Show What I Know**

To demonstrate what I have learned about ________________________________, I will:

- Write a research paper
- Produce a YouTube video
- Write a song
- Construct a model
- Write and deliver a podcast
- Set up and test a hypothesis
- Write a short story
- Design a mural
- Develop a presentation, such as a TED Talk, using technology

- Other ____________________________________________________________ (Teacher approval required)

This would be a good way to show what I have learned because

___________________________________________________________

To complete my work on this project, I will need help with

___________________________________________________________

The criteria to be used to assess my final produce is

___________________________________________________________

My project will be completed by (date)________________________________

My plan and timeline for how I will complete my work is attached.

Student Signature____________________________________Date___________________

Teacher Signature____________________________________Date___________________

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Four-Box Synectics - Synectics, originated by William J.J. Gordon, is a creative process that asks students to create analogies related to a concept or information under study or a process being used. Students begin by naming four inanimate objects, one of which has moving parts. Students then compare a concept or topic being studied to each of the four objects. An example of the technique follows.

Four-Box Synectics for Database

<table>
<thead>
<tr>
<th>Closet</th>
<th>Doorway</th>
</tr>
</thead>
<tbody>
<tr>
<td>A database is like a closet because it can hold an amazing amount of old and new items.</td>
<td>A database is like a doorway because it serves as a portal to connect component parts with one another.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trashcan</th>
<th>Furnace</th>
</tr>
</thead>
<tbody>
<tr>
<td>A database is like a trashcan because when it overflows, you can delete what you no longer want.</td>
<td>A database is like a furnace because it functions better with frequent check-ups and filter changes.</td>
</tr>
</tbody>
</table>

Example adapted from Instructional Strategies for Engaging Students, Guilford County Schools, NC 2002

A _______________ is like a _______________ because...

Student responses typically are clever and often unpredictable, and when the strategy is being used, creative juices will definitely flow.

The Bottom Line

For teachers to wisely design and select the instructional methods they use to teach and reinforce 21st century skills, an extensive repertoire of approaches is required so that purposeful decisions can be made to ensure that those skills are embedded in all learning experiences. Providing students with interesting, unusual, and creative ways to learn will not only make their work more stimulating but they will view their teacher as someone who has a good strong handle on the 21st century skills as well.

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