



VUSD Best Practices Conference • Friday, January 17, 2014

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We've Got the H.O.T.S. - Critical and Creative Thinking

Participants will identify and articulate intellectual behavior in both critical and creative thinking in the arts. Join us to nurture curiosity, apply thoughtful relevant learning, and innovate through Higher Order Thinking Skills.

Enduring Understanding: Creative and Critical thinking are integrated into all aspects of life, as a part of cultural, expressive, and intellectual subjects of study.

Essential Question: How can we scaffold teaching to create learning experiences while identifying thought processes to enhance life-long learning and address content needs?

Evocative Teachers: Embrace the Learner, provide reflective dialogue, and invite students to assimilate information, while students discover, pursue, and apply knowledge, and share group and personal conclusions or outcomes.

Dynamic Learning and Thinking: Teachers need to actively engage and create knowledge and learning experiences with Dynamic Learning and Thinking that connects relationships of people, sound, and process in a piece where the impact of this process meets the needs for all involved. The ensemble constructs its own knowledge and learning through experiential opportunities and reflection.

Expert Learners and Teachers: We want expert *learners* as much as we want to be expert *teachers* – this creates life-long learning and teaching as it provides strategies for students and teachers to process information and to delve further into the ‘learning moment’ while teachers, in turn, search and discover the teachable moment.

Structured Inquiry: Structured inquiry leads to understanding, as students look for answers while they are constructing new knowledge. It prepares students for independent, higher-order thinking, as they explore, conceptualize, and apply information. Within structured inquiry, the teachers provide questions, processes, and activities that guide the learner through the steps of the task. While it begins within a structure, it eventually moves towards independence.

Critical and Creative Thinking – the Cognitive Domain - Bloom's Taxonomy

<http://eduscapes.com/tap/topic69.htm>

Critical Thinking – Critical thinking involves logical thinking and reasoning including skills such as comparison, classification, sequencing, cause/effect, patterning, webbing, analogies, deductive and inductive reasoning, forecasting, planning, hypothesizing, and critiquing.

Creative Thinking – involves creating something new or original. It involves the skills of flexibility, originality, fluency, elaboration, brainstorming, modification, imagery, associative thinking, attribute listing, metaphorical thinking, and forced relationships. The aim of creative thinking is to stimulate curiosity and promote divergence.

System Thinking: It is ALL about the class, as a whole living system and the interactions within the living system of the classroom: The classroom climate and culture, classroom management and relationships, and how we (and students) are perceived, received, and interact with the living system as a whole - the class, the process, and the desired end product. (Is your class a safe and dynamic learning environment?)

Socratic Questioning: What types of questions do we ask to *facilitate* the process?

Asking questions based on Bloom's Taxonomy (Research Socratic Questioning)

Bloom's Revised Taxonomy: Remembering, Understanding, Applying, Analyzing, Evaluating, Creating

- **Questions that clarify:**

Can you explain the overall timbre of this ensemble, thus far?

What do you mean when you say . . .

Can you give me an example of an augmented rhythm pattern?

Does anyone have a question about the ensemble patterns to this point? Suggested form of this piece?

- **Questions that Probe or ask for reasons and evidence:**

How do we know this rhythm is complementary?

Can you play another example of a contrasting pattern?

- **Questions that ask or explore for alternative views or ideas:**

Is there another rhythm we could add to this and why?

If we added a different timbre, what could it be and why?

- **Questions that request application of information to ‘test’ the implications:**

Explain how this musical idea fits with what we created earlier

If we add this new pattern, what happens to the overall timbre?

Listen to the layered ensemble, what should we add and why?

If we add this pattern will it complement the previously suggested pattern and how will it do so?

- **Questions about the discussion or question:**

Who can summarize the overall process of our composition process?

Are we closer to completing this composition process? Why or why not?

Do you have any questions about this?

Adapted from: (Adapted from Teaching Thinking - Philosophical Enquiry in the classroom by Robert Fisher (1998) Brunel University)

Throughout the outlined process below, the structured inquiry and reflective questioning process will support constructivist teaching and learning.

<http://on.docdat.com/docs/510/index-138879.html>

Thinking tools – what are they?

www.criticalthinking.org

The Thinker’s Guide to The Nature and Functions of Critical & Creative Thinking

<http://eduscapes.com/tap/topic69.htm>

Critical and Creative Thinking - Bloom’s Taxonomy and words:

<http://giftedresource.com/gifted-hot-topics/creativity/>

There is a Creativity Crisis in America!

<http://kumardeepak.wordpress.com/2012/07/18/components-of-creativity/>

Innovation, contrary to popular belief, doesn’t happen with a lone inventor working alone in his laboratory, though there have been quite a few discoveries and inventions this way.

<http://kumardeepak.wordpress.com/learning-techniques/>

Here are some learning techniques based on research in the fields of education, neuroscience, cognitive psychology, etc.

<http://infogr.am/Higher-Order-Thinking-Skills?src=web>

Awesome Info-graphic

<http://ruthcatchen.wordpress.com/2012/04/03/tips-to-improve-critical-thinking-in-arts-education/>

Tips to Improve Critical Thinking in Arts Education

<http://www3.wooster.edu/teagle/vendiagram.php>

Creative and Critical Thinking Venn Diagram

<http://www.scoop.it/t/21st-century-skills-of-critical-and-creative-thinking>

21st Cent Skills of critical and creative thinking

http://www.scoop.it/t/bloom-s-taxonomy-presented-visually/p/4003020910/2013/06/10/70-web-tools-organized-for-bloom-s-digital-taxonomy-edudemic?_tmc=gvgjaS8lpnDmcAAcs6QjYsGoo66K3ywnKIAJ7DCmn_Q

Web tools organized for Bloom's Digital Taxonomy

<http://blogs.kqed.org/mindshift/2012/05/flip-this-blooms-taxonomy-should-start-with-creating/>

Bloom's taxonomy inverted

<http://www.scoop.it/t/21st-century-skills-of-critical-and-creative-thinking>

Creative Confidence: People with creative confidence have a greater impact on the world around them

<http://www.uft.org/insight/helping-students-develop-higher-order-thinking-skills>

Helping students develop higher-order thinking skills. The soul of an education

<http://mrtylerwright.wordpress.com/discussions/>

Inquiry-based learning approaches emphasize the need for student learning to be investigative and student-driven.

http://www.utar.edu.my/fegt/file/Revised_Blooms_Info.pdf

Revise Bloom's Taxonomy

<http://www.adobe.com/aboutadobe/pressroom/pressreleases/pdfs/201211/110712AdobeEducationCreativityStudy.pdf>

Adobe on Creative Thinking—Study: Creativity Should be Taught as a Course

<https://www.images2.adobe.com/content/dam/Adobe/en/education/pdfs/adobe-creativity-education-findings.pdf>

Adobe on Creative Thinking—Creativity and Education: Why it Matters

<http://www.worwic.edu/Media/Documents/Assessment/Bloom's%20Taxonomy%20Breakdown.pdf>

Bloom's Taxonomy Breakdown: Roles, Process Verbs & Products from Bloom's Taxonomy of the Cognitive Domain