Teaching Content and Creativity Through Student-Generated Media Projects

Dissertation Proposal Summary

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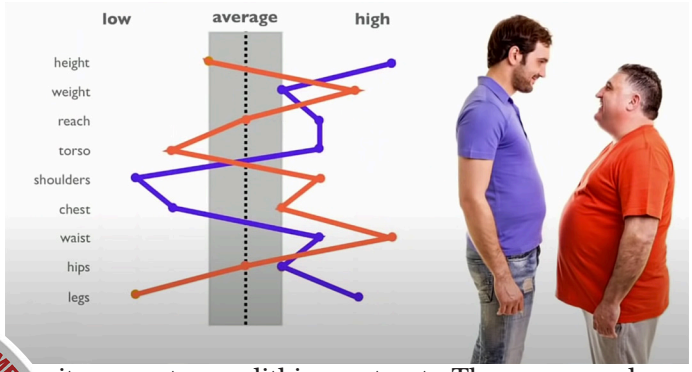
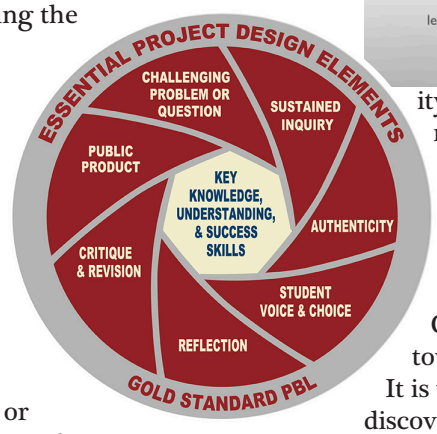
The Need for Creativity:

Solving the many challenges we face as a society will take a generation of creative innovators, yet our education system does a poor job of teaching creativity (Kim, n.d.). In many ways, schools kill creativity (Robinson & Aronica, 2015) because of the focus on getting the "right" answer on state mandated tests and the obsolete factory model of education that promotes efficiency and teaching to averages instead of effectiveness and meeting the needs of every student.



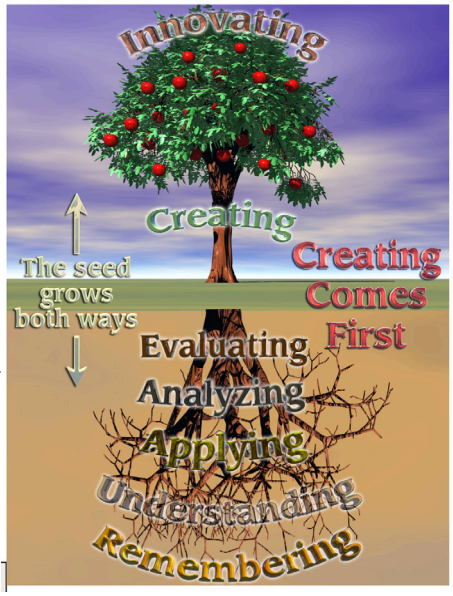
Project-based Learning:

Students report being bored and unengaged in classes. One solution is to allow students voice and choice in how they demonstrate mastery through highly engaging student projects that grapple with solutions for local and global problems. By providing a challenging problem or authentic question, giving students a chance for sustained inquiry, and requiring them to demonstrate mastery through a publicly presented project, students will be highly motivated to create professional quality products.



Inverting Bloom's Taxonomy:

Instead of a pyramid, let's visualize Bloom's taxonomy as a tree. If we start with the seed of creativity planted through meaningful, engaging projects, students will dig down and grow the roots of knowledge, applications, understandings, evaluations, and syntheses needed to complete the project. The tree will also grow upward to produce the fruit of innovation.



The Jaggedness Principle and Eudaimonism:

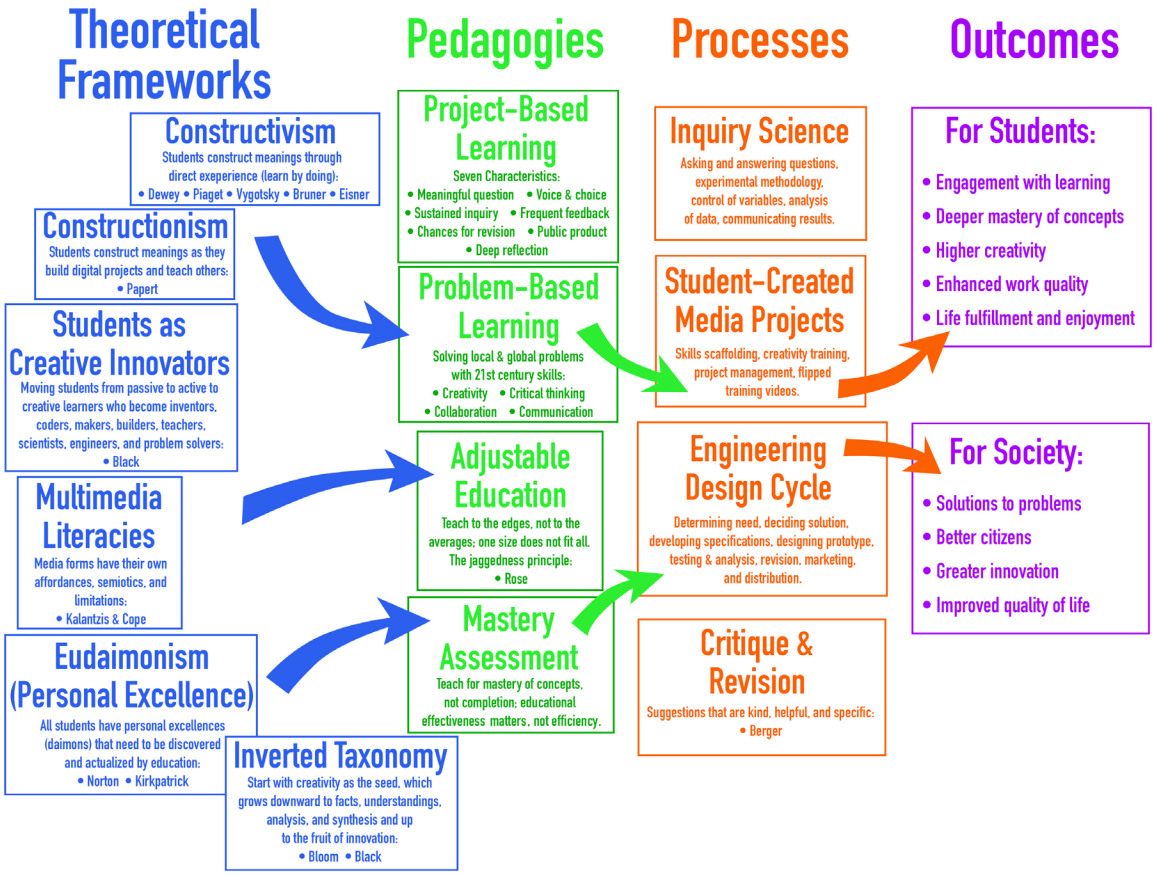
Human characteristics such as intelligence and creativity are not monolithic constructs. They are complex multi-faceted abilities and are jaggedly distributed. Each individual has a unique form of intelligence or creativity, and when we force all students into a bell-shaped curve of averages, we create a system that doesn't fit their unique personal excellences. The ancient Greek concept of the Daimon (Latin: Genius) as an inner drive or muse that compels one toward a personal destiny (Arete) may be useful here. It is the highest purpose of education to help a student discover that inner daimon, then learn to live by it or actualize it (Norton, 1976; Kirkpatrick, 2019).

Learning Concepts and Creativity through Media Design:

The goal should be to move students from being passive learners toward active learning and eventually to creative learning. In science education, this means promoting inquiry experiments, hands-on labs, and helping students to ultimately become makers, coders, inventors, teachers, scientists, and engineers. Students can learn science deeply using project-based pedagogy by designing their own media design projects, such as brochures, newsletters, bulletin boards, infographics, board games, videos, 3D models, animations, cartoons, and computer video games. As they create educational content to teach others, they learn the content themselves.

Pilot Study and Dissertation Research:

I am developing a feasibility study in my own science classes where at least once per unit students are required to produce some form of media that can be used to teach their peers about the unit concepts or shared online through my blog sites. Because commercial software has a high barrier to entry for technology and price, I use free browser-based software that can run on Chromebooks or cell phones. Students choose how they will demonstrate mastery of the concepts, and as they present their products to classmates, their peers evaluate them using a process called Critique (Berger, 2017) where the evaluators provide suggestions that are kind, specific, and helpful. They are evaluated on four dimensions: concept mastery, creativity, quality, and teaching. Students may incorporate their peers' suggestions, revise their projects, and present them again to me for higher scores until they have fully mastered the concepts.



This initial process has led to amazing creativity, deep concept learning, high student engagement, and enhanced project quality for my students. For my upcoming dissertation research, I will recruit 8-10 science teachers to try out this system in their own classrooms during the fall of 2022, training students on software using flipped YouTube videos. Data will be compared from pre-and-post student unit tests, questionnaires, observations, analysis of artifacts (critique forms and projects), student forums, and teacher interviews. I hope to show that this system can be generalized to other classrooms and teachers, and obtain empirical and detailed qualitative evidence on its effectiveness.

Contact Information:

I welcome any suggestions or insights you might have as expert educators. You can read more about this program and student projects on my blog sites at:

http://elementsunearthed.com and at:
http://spacedoutclassroom.com.

Please email any comments or suggestions to:

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