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To develop students' design and combination skills

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Abstract: This article focuses on developing students' ability to design, create combinations. The advantages of exploring the rapidly evolving field of design today are illustrated

Keywords: Design, World, Methodology, Empathy, “21st Century Skills” Creativity.

Design Thinking is a practical tool for integrating 21st century skills and an innovator’s mindset into the classroom, school and workplace. It demonstrates the direct connection between content students learn in class and what the world beyond their school will ask of them. Students are inspired. They take an active role in their own learning. Developed at the Stanford d.school, Design Thinking is a methodology that teaches individuals new strategies to solve problems. The design process challenges students to combine empathy, ingenuity and rationality to meet user needs and create successful solutions with an innovator’s mindset. Students are taught to defer judgment early in the process, which reduces fear of failure and encourages thinking outside the box.

Teachers cultivate a creative mindset to develop rigorous and relevant programs for their students. Design Thinking allows students to fail fast and learn by doing rather than avoiding failure by striving for initial perfection. It fosters the need to ask relevant questions versus giving correct answers. It requires teachers to guide and show pupils instead of telling and lecturing. It encourages students to become process experts as opposed to subject experts.

Traditional models of education in the United States are formed around content-based standards in which teachers are responsible for transferring a specified set of knowledge and skills to their students. Ultimately, the success of students’ proficiency in these areas is measured by uniform aptitude tests based more on logic and memorization rather than complex problems that require critical and creative thinking skills. To prepare today’s students, we know they need much more than content knowledge. The world they will inherit will require them to think critically and creatively, collaborate, solve complex problems and be able to navigate an increasingly multi-faceted and sophisticated world. To help them succeed, we must become adept instructors of the metacognitive skills and processes necessary to solve problems creatively. This includes being able to assess incremental progress in thinking and creative skills development across grade levels.

Our world has become increasingly complex, volatile and uncertain. Education plays a crucial role in preparing young people for a future of complex challenges such as globalization, digitalization and climate change. Siemens Stiftung offers high-quality science and technology education in order to provide young learners with the relevant knowledge to understand scientific and technical interrelations. Additionally, skills such as creative problem solving, the ability to innovate, and critical thinking – known as “21st century skills” – are increasingly important for openly embracing change and conscientiously shaping the future. This is why Siemens Stiftung has recently introduced “STEM and creativity” into its international education program by integrating design thinking as a new teaching method in STEM lessons. Thus, with the “Design Thinking in STEM” project, Siemens Stiftung combines STEM education with creative processes to encourage innovative thinking among young people. The project is aimed at developing approaches for teaching these abilities in science and technology lessons. The design thinking method encourages students to address challenges with a sense of empathy, viewing a problem through the eyes of someone actually confronting it.

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There's a specific design ability that can be developed and nurtured. Its qualities include:

- Creativity, lateral thinking, and intuition
- Effectively clarifying and communicating concepts and ideas through models, sketches, and stories
- Being solution-focused—meaning designers make sense of a problem space by proposing and trying solutions
- Focusing on how things ought to be versus how things are

Characteristics of a design-thinking leader

Sees the world in terms of problems and products. Richard Buchanan adopts a broad view of products that includes information, artifacts, activities, services, systems, and environments. All of these can be designed in order to solve specific problems. All of these entities are within the scope of practice of leaders. [5, 6]

Views self as product. A leader viewing themselves as a product means adopting a designerly approach to their own attitude, behavior, and outlook. Design-thinking leaders iterate on versions of themselves that will lead to exceptional team performance.

Rigorously cultivates the abilities of a designer—especially empathy and optimism. Tim Brown did an excellent job of identifying the traits of a design thinker, many of which have direct correlations to the tenets outlined in the theory of transformational leadership. Once again, these include: empathy, integrative thinking, optimism, experimentalism and collaboration.

Deeply understands the process of creative problem solving and knows how to act as a catalyst for creativity. Within the creative process, leaders should seek to be conduits, provocateurs, shepherds, and motivators.

Collaborates and communicates outside of PowerPoint. Design-thinking leaders think of new ways to engage groups, drawing upon methods from books like *Gamestorming* and *Thinkertoys*.

Embraces ambiguity and seeks opportunity to use models and other forms of making to tame chaos and create order. It's not a new concept that leaders should embrace ambiguity and chaos,[10] but doing this with a design attitude empowers leaders to tame this through designerly activities like modeling, sketching, and storytelling.

Prototypes visions, not just products. Prototypes are typically used to test out products in various stages of fidelity in order to get meaningful feedback from stakeholders. Design-thinking leaders should look for ways to prototype and test out different visions for their organization. This could include things like role-playing, or writing magazine articles about the future success of the company. There are always opportunities to "prototype" a more desirable future.

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References

1. Richard Buchanan and Victor Margolin, Discovering Design, (University of Chicago Press, 1995); Buchanan, "Design Research and the New Learning"; J Kolko, "Abductive Thinking and Sensemaking: the Drivers of Design Synthesis," Design Issues, 2010; V Papanek, Design for the Real World, New York, (Pantheon, 1971).
2. Papanek, Victor: Design for the Real World.
3. Buchanan and Margolin, Discovering Design; Buchanan, Design Research and the New Learning.
4. T Brown, "Design Thinking," Harvard Business Review, 2008.
5. Buchanan, R. (2001). "Design Research and the New Learning." Design Issues.
6. Bass, B. M. (1991). "From Transactional to Transformational Leadership: Learning to Share the Vision." Organizational Dynamics, 18(3), 19–31.
7. Annals of RSCB [Internet]. 2021Apr.17 [cited 2021Oct.29];:6854 -. Available from: https://www.annalsofrscb.ro/index.php/journal/article/view/3281
8. Brown, T. (2008). "Design Thinking." Harvard Business Review.
9. Gray, D., Brown, S., & Macanufo, J. (2010). Gamestorming: A Playbook for Innovators, Rulebreakers, and Changemakers, 1st edition.