The SAMR Model: Six Exemplars

Ruben R. Puentedura, Ph.D.
Augmenting Human Intellect & Learning Capacity

21st Century Learning

One-to-One Technologies
Substitution
Tech acts as a direct tool substitute, with no functional change

Augmentation
Tech acts as a direct tool substitute, with functional improvement

Modification
Tech allows for significant task redesign

Redefinition
Tech allows for the creation of new tasks, previously inconceivable

Podcasts on iTunes U: http://tinyurl.com/aswemayteach
<table>
<thead>
<tr>
<th>Social</th>
<th>Mobility</th>
<th>Visualization</th>
<th>Storytelling</th>
<th>Gaming</th>
</tr>
</thead>
<tbody>
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<td>200,000 years</td>
<td>70,000 years</td>
<td>40,000 years</td>
<td>17,000 years</td>
<td>8,000 years</td>
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English
Marzano:
Six Steps to Effective Vocabulary Instruction

• Step 1: The Teacher Provides a Description, Explanation, or Example of the New Term

• Step 2: Students Restate the Explanation of the New Term in Their Own Words

• Step 3: Students Create a Nonlinguistic Representation of the Term

• Step 4: Students Periodically Do Activities That Help Them Add to Their Knowledge of Vocabulary Terms

• Step 5: Periodically Students Are Asked to Discuss the Terms with One Another

• Step 6: Periodically Students Are Involved in Games That Allow Them to Play with the Terms

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Biology and Physics
Understanding Science: How Science Works

EXPLORATION AND DISCOVERY

Making observations
Asking questions
Sharing data and ideas
Finding inspiration
Exploring the literature

Gathering data

Hypotheses
Expected results/observations
Actual results/observations

Interpreting data

Supportive, contradictory, surprising or inconclusive data may...

Testing Ideas

Develop technology
Address societal issues
Inform policy
Solve everyday problems

Benefits and Outcomes

New technology
Practical problem
Curiosity

Personal motivation
Serendipity
Surprising observation

Discussion with colleagues
Feedback and peer review
Replication
Publication

Coming up with new questions/ideas
Theory building

Community Analysis and Feedback

www.understandingscience.org

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Geography
Gersmehl:  
Teaching Geography – Four Cornerstones

- Location
  - Position in space

- Condition
  - Mix of natural & artificial features that give meaning to a location

- Links
  - Connections between places

- Region
  - Formal region: group of places with similar conditions
  - Functional region: group of places linked together by a flow
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![Kiva.org](https://example.com/kiva.png)
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Focusing the Model
It is imperative that the CCSS be considered the “floor”—not the “ceiling”—when it comes to expectations for student performance in the 21st century.

P21 Common Core Toolkit
A Guide to Aligning the Common Core State Standards with the Framework for 21st Century Skills

Partnership for 21st Century Skills
The SAMR Ladder: Questions and Transitions

- **Substitution:**
  - What will I gain by replacing the older technology with the new technology?

- **Substitution to Augmentation:**
  - Have I added a feature to the task process that could not be done with the older technology at a fundamental level?
  - How does this feature contribute to my design?

- **Augmentation to Modification:**
  - How is the original task being modified?
  - Does this modification depend upon the new technology?
  - How does this modification contribute to my design?

- **Modification to Redefinition:**
  - What is the new task?
  - Will it replace or supplement older tasks?
  - How is it uniquely made possible by the new technology?
  - How does it contribute to my design?
An authentic connection between academic disciplines and real world experience

A framework and workflow to develop 21st century skills

The purposeful use of technology for researching, analyzing, organizing, collaborating, communicating, publishing and reflecting.

The opportunity for learners to do something important now, rather than waiting until they are finished with their schooling

The documentation and assessment of the learning experience from challenge to solution

An environment for deep reflection on teaching and learning

A process that places students in charge of their learning

These attributes enable Challenge Based Learning to engage all learners, provide them with valuable skills, span the divide between formal and informal learning, and embrace a student's digital life.

Key Components

The Challenge Based Learning process begins with a big idea and cascades to the following: an essential question, a challenge, guiding questions, activities, and resources, a solution, implementation, evaluation, reflection, assessment, and publishing.

The Big Idea:

The big idea is a broad concept that can be explored in multiple ways, is engaging, and has importance to learners, and the larger society. Examples of big ideas are Resilience, Separation, Creativity, Health, Sustainability, and Democracy.

Essential Question:

By design, the big idea allows for the generation of a wide variety of essential questions. Eventually the process narrows to one essential question that reflects the interests of the learners and the needs of their community.

The Challenge:

From the essential question a concise challenge is articulated that asks the learners to create a specific solution that will result in concrete, meaningful action.

Guiding Questions, Activities and Resources:

Generated by the learners, guiding questions represent the knowledge needed to successfully develop a solution and provide a map for the learning process. The learners identify lessons, simulations, activities, and content resources, to answer the guiding questions and set the foundation for them to develop innovative, insightful, and realistic solutions.

Solutions:

Each challenge is stated broadly enough to allow for a variety of solutions. The solution should be thoughtful, concrete, clearly articulated and actionable in the local community.
The CBL Process

Collaborative Space
  - How will the teams communicate?
  - Where will resources be shared?

Introduction
  - Why is this idea important to the students?
  - Why is this idea important to the community?

Team Formation
  - What makes up a productive design team?
  - How do we capitalize on everyone’s skills?

Assessment
  - How will the process be assessed?
  - How will the solution be assessed?

Guiding Questions
  - What do we need to know in order to meet the challenge?

Guiding Activities
  - What do we need to do to answer our guiding questions?
  - What resources are needed?

Solution Development
  - How do we meet the challenge?
  - Is the solution justified?

Implement and Assess
  - How can the solution be tested?
  - Did the solution work?

Document/Reflect
  - What did we learn?
  - What would we do differently?

Publish
  - How do we share our results?
  - What is the story behind the solution?
Additional Resources
Resources

Background:


SAMR and TPCK:

Resources – Part II

**Defining Mobile Devices/The Lively Sketchbook**

**The Curiosity Amplifier**

**Technology In Education: The First 200,000 Years**
Photo Credits

• *iPad in Subway*: Takashi M

• *YouTube + iPad + Hanalei = Happiness*: Wayan Vota

• *Parcours-jeu multimedia : Les métiers du musée*: Jean-Pierre Dalbéra