Redefining Learning: SAMR and the EdTech Quintet

Ruben R. Puentedura, Ph.D.
**Redefinition**
Tech allows for the creation of new tasks, previously inconceivable

**Modification**
Tech allows for significant task redesign

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

**Substitution**
Tech acts as a direct tool substitute, with no functional change

Ruben R. Puentedura, *As We May Teach: Educational Technology, From Theory Into Practice*, (2009)
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 do activities that help them add to their knowledge of vocabulary terms

Step 5
Students are asked to discuss the terms with one another

Step 6
Students are involved in games that allow them to play with the terms
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<thead>
<tr>
<th>Study</th>
<th>SAMR Level</th>
<th>Description</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ligas (2002)</td>
<td>S</td>
<td>CAI system used to support direct instruction approach for at-risk students.</td>
<td>0.029</td>
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<tr>
<td>Xin &amp; Reith (2001)</td>
<td>A</td>
<td>Multimedia resources provided to contextualize learning of word meanings and concepts.</td>
<td>0.264</td>
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<tr>
<td>Higgins &amp; Raskind (2005)</td>
<td>M</td>
<td>Software/hardware used for text-to-speech, definitions, pronunciation guide for children with reading disabilities.</td>
<td>0.600</td>
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<tr>
<td>Salomon, Globerson &amp; Guterman (1989)</td>
<td>R</td>
<td>Software presents students with reading principles and metacognitive questions as part of the reading process.</td>
<td>1.563</td>
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Brief Lecture or Group Discussion
(~10 minutes)

ConcepTest
(~1-2 minutes)

Fewer than 30% of students answer correctly
The instructor revisits and explains the concept

Between 30-75% of students answer correctly
Peer Discussion: students try to convince each other
(~2-3 minutes)

More than 75% of students answer correctly
The instructor explains remaining misconceptions

ConcepTest
(~1-2 minutes)

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Learning Environments

- School
- World
- Home

- Contextual Search
- Augmented Reality
- Cloud Resources
- Mobile Tools
- Sensors
- Recorders
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Formal Definition of **Game** (Salen & Zimmerman)

“A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.”
