

# SAMR: Two Questions

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# Two Questions

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- When is a task in school redefined or not?
  - What defines the redefinition?
- How can you classify a task in regards to the SAMR model?
  - How can a teacher know if a task is on Level M or R?
  - What do you – at each step – need to add to a task to move it from S to A to M to R?

*Transformation*

### **Redefinition**

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

### **Modification**

*Tech allows for significant task redesign*

*Enhancement*

### **Augmentation**

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

### **Substitution**

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

# The SAMR Ladder: Questions and Transitions

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- **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?

# Seymour Papert: Four Expectations

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- **Expectation 1:** the scholastically unsuccessful group among the students will advance by several grade levels on standard achievement tests in mathematics and language. We shall, of course, confirm the significance of any such observation by comparison with a control group matched on a series of variables set up before the outset of the experiment.
- **Expectation 2:** observers will agree that the student in the experiment not only learned more than in a traditional class, but learned it in a more articulate, richer, more integrated way.
- **Expectation 3:** students will develop, or adapt concepts and metaphors derived from computers and use them not only as intellectual tools in the construction of models of such things as "number" and "theory" but also in elaborating models of their own cognitive processes. This will in turn have an impact on their styles of learning and problem-solving.
- **Expectation 4:** the use of computer metaphors by children will have effects beyond what is normally classed as "cognitive skill". We expect it will influence their language, imagery, games, social interactions, relationships, etc...

# Bloom's Taxonomy: Cognitive Processes

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| <b>Anderson &amp; Krathwohl (2001)</b> | <b>Characteristic Processes</b>   |   |
|--|---|---|
| Remember                               | <ul style="list-style-type: none"> <li>• Recalling memorized knowledge</li> <li>• Recognizing correspondences between memorized knowledge and new material</li> </ul>   |   |
| Understand                             | <ul style="list-style-type: none"> <li>• Paraphrasing materials</li> <li>• Exemplifying concepts, principles</li> <li>• Classifying items</li> <li>• Summarizing materials</li> </ul>   | <ul style="list-style-type: none"> <li>• Extrapolating principles</li> <li>• Comparing items</li> </ul> |
| Apply                                  | <ul style="list-style-type: none"> <li>• Applying a procedure to a familiar task</li> <li>• Using a procedure to solve an unfamiliar, but typed task</li> </ul>   |   |
| Analyze                                | <ul style="list-style-type: none"> <li>• Distinguishing relevant/irrelevant or important/unimportant portions of material</li> <li>• Integrating heterogeneous elements into a structure</li> <li>• Attributing intent in materials</li> </ul>  |   |
| Evaluate                               | <ul style="list-style-type: none"> <li>• Testing for consistency, appropriateness, and effectiveness in principles and procedures</li> <li>• Critiquing the consistency, appropriateness, and effectiveness of principles and procedures, basing the critique upon appropriate tests</li> </ul> |   |
| Create                                 | <ul style="list-style-type: none"> <li>• Generating multiple hypotheses based on given criteria</li> <li>• Designing a procedure to accomplish an untyped task</li> <li>• Inventing a product to accomplish an untyped task</li> </ul>  |   |

# Critical Thinking: Cognitive Skills and Subskills

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| Skill           | Subskills  |
|-----------------|--|
| Interpretation  | <ul style="list-style-type: none"><li>●Categorization</li><li>●Decoding Significance</li><li>●Clarifying Meaning</li></ul>         |
| Analysis        | <ul style="list-style-type: none"><li>●Examining Ideas</li><li>●Identifying Arguments</li><li>●Analyzing Arguments</li></ul>       |
| Evaluation      | <ul style="list-style-type: none"><li>●Assessing Claims</li><li>●Assessing Arguments</li></ul>                                     |
| Inference       | <ul style="list-style-type: none"><li>●Querying Evidence</li><li>●Conjecturing Alternatives</li><li>●Drawing Conclusions</li></ul> |
| Explanation     | <ul style="list-style-type: none"><li>●Stating Results</li><li>●Justifying Procedures</li><li>●Presenting Arguments</li></ul>      |
| Self-Regulation | <ul style="list-style-type: none"><li>●Self-examination</li><li>●Self-correction</li></ul>   |

# Hippasus

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