INTRODUCTION TO THE SAMR MODEL OF TECHNOLOGY INTEGRATION

Great teaching hasn’t changed. The toolbox has.

AUGUST 2015
Want to follow along on line?

Go to

https://goo.gl/aOHA0h

(capitals, Os and Zeros matter)
HOW DO YOU LEVERAGE TECHNOLOGY TO PLAN AND IMPLEMENT HIGHLY EFFECTIVE LEARNING THAT WAS PREVIOUSLY INCONCEIVABLE IN TRADITIONAL CLASSROOMS?

“Effective learning in any environment requires good design, management and pedagogy.

The SAMR model aims to support teachers to design, develop and integrate learning technologies to support high levels of learning achievement.”

SIMPLE QUESTIONS TO DRIVE OUR INTEGRATION OF ANY DIGITAL TECHNOLOGIES
The **SAMR** journey is more about mindset than tech competence.

How are your students preparing for a life of learning without all-knowing teachers?

Original model by Ruben R. PuenteDura

By @iPadWells  more at iPad4Schools.org

http://ipad4schools.files.wordpress.com/2014/02/i4s-samr-mindset1.jpg
WHAT DOES SAMR STAND FOR?

SUBSTITUTION  AUGMENTATION

MODIFICATION  REDEFINITION
A SIMPLE AND HUMOROUS MODEL OF SAMR

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

cup of coffee

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

latte

Modification
Tech allows for significant task redesign.

caramel macchiato

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

https://www.youtube.com/watch?v=us0w823KY0g
Note that it isn’t necessarily a hierarchy and movement doesn’t necessarily have to move in one direction or another to improve outcomes. (It isn’t really a ladder to be climbed.)
### SAMR Model

<table>
<thead>
<tr>
<th>R</th>
<th>M</th>
<th>A</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Redefinition</strong></td>
<td><strong>Modification</strong></td>
<td><strong>Augmentation</strong></td>
<td><strong>Substitution</strong></td>
</tr>
<tr>
<td>tech allows for creation of new tasks previously inconceivable</td>
<td>tech allows for significant lesson redesign</td>
<td>tech is a tool substitute with some improvement</td>
<td>tech is a tool substitute with no functional change</td>
</tr>
<tr>
<td>integrated movies, hot links, software, apps,</td>
<td>integrated email graphs, images spreadsheets</td>
<td>word processing with spell check, cut and paste</td>
<td>word processor used as a typewriter</td>
</tr>
<tr>
<td>Skype with experts, compare, combine results via wikis and blogs, publish world wide online</td>
<td>spreadsheets, graphs, email with others, redesign lab, hand in</td>
<td>grammar, spell check, cut. paste, print, hand in</td>
<td>word process lab report, print out, hand in</td>
</tr>
</tbody>
</table>

#### Different colors, Different examples

**SAMR**

Addresses how we can **TRANSFORM** and **ENHANCE** our instruction with new tools.

Photo credit / source: principals.org
LET’S LOOK AT EXAMPLES.
CONSIDER THE QUILL PEN FOR WRITING

SUBSTITUTION
Manual press to produce writing

AUGMENTATION
Several writers manually producing writing

MODIFICATION
Electronic press producing writing

REDEFINITION
Computer & Internet producing writing
M. Smith's class collaborates with other classes locally or globally on a common issue. Students research and share their findings in order to find a common solution. The project is cross-curricular and multidisciplinary, utilizing the strengths of the students in the different classes. Students use a variety of multimedia to collect, communicate and distribute their findings and conclusions. Various technologies are used to communicate and share information between the various school groups.

SAMR Example adapted from: http://www.mackenty.org/images/uploads/SAMR_Buds.jpg
Previous Practice...

M. Smith is a classroom teacher who teaches writing. Some time ago, the primary mode for writing in class was pencil/pen and paper.

Substitution is...

Students in M. Smith's class use a word processor for their writing. Students can now easily edit and format their writing. Published student work is now printed rather than handwritten. Students can save various drafts of their work and can produce multiple copies of the finished product without using a photocopier.

http://www.slideshare.net/brandonmorton/samr
AUGMENTATION

Students not only write a book with iBooks (to substitute for writing on paper), they also augment the book by recording a sound file of the book’s text so that another student can experience it as both a visual and audio experience.
INTERACTIVE WITH EXAMPLES ON THINGLINK

HTTPS://WWW.THINGLINK.COM/SCENE/48942893834051074
HOW DOES IT WORK TO INCREASE RIGOR?

The Knowledge Taxonomy (familiar to educators who have studied Bloom's Taxonomy of learning) describes the increasingly complex ways in which people think.

The Rigor/Relevance Framework is represented by a four-quadrant model.
A CAUTIONARY TALE...COMMON MYTHS AND MISPERCEPTIONS ABOUT SAMR

Myth 1 – the SAMR Model is a hierarchy. It is not. It is in some ways just another scale of pedagogic engagement or taxonomy.

Myth 2 – SAMR favors tech-heavy solutions. SAMR has space in the Redefinition level for lessons that do not seem to have much to do with tech. A lesson that develops a highly innovative, project based, culminating activity that uses tools that have existed for centuries might still be a case of Redefinition on the SAMR model.

http://www.teacherpaul.org/2889
Myth 3 – Lessons can be rated on the SAMR scale without their curricular context. In R. Puentevedra’s research about effectiveness, lessons that scored more highly on the SAMR ladder sometimes yielded a far greater improvement in results than lessons at the Substitution level. Context is key. It’s impossible to know what level of tech integration is actually occurring in a class without knowledge of how that lesson fits into the overall unit and curriculum.

Myth 4 – Once you have reached Redefinition you have ‘maxed-out’ that technology. Not so. There are always ways that we can be inventive and take the teaching and learning involved to the next level.
HOW TO GET STARTED WITH SAMR?
QUESTIONS TO ASK

What will I gain by replacing the task with new tech?

Does the tech add new features that improves the task?

Does the task significantly change with the use of tech?

Does the tech allow for creation of new task previously unconceivable?

SUBSTITUTION

AUGMENTATION

MODIFICATION

REDEFINITION
We should consider the honest answers to two questions:

1. *Will this use of the tool enable students to do something that they COULDN'T do before?* (Transformation)

2. *Will this use of the tool enable students to do something that they COULD do before, but better?* (Enhancement)

If the honest answer to both of these questions is "no," there is no reason to use new tools or resources in the ways that we are considering. Our time, effort, and resources would be better used in another way. (Perhaps we would consider another tool or resource that would accomplish 1. or 2.)

http://ectechhornet.blogspot.ae/2012/10/blending-rigor-relevance-with-samr-and.html
CONSIDER THESE FOR DECIDING UPON YOUR FIRST DIGITAL INTEGRATION PROJECT

Three Options

• Your Passion:
  • If you had to pick one topic from your class that best exemplifies why you became fascinated with the subject you teach, what would it be?

• Barriers to Your Students’ Progress:
  • Is there a topic in your class that a significant number of students get stuck on, and fail to progress beyond?

• What Students Will Do In the Future:
  • Which topic from your class would, if deeply understood, best serve the interests of your students in future studies or in their lives outside school?
SAMR FLOW CHART

Scalable version here:

FINALLY, SOME INSPIRATIONAL WORDS:

Take heart. It’s not essential to do everything at the highest level. You still have to post your syllabus, like it or not, and this will probably never be a transformative learning experience for your students. Still, it’s worth looking through your class, and identifying two kinds of activities.

1. First, find the activities that you enjoy teaching the most, and see if there are ways you can expand those into the transformative realm, or at least take them up a rung.

2. Then, go look for the activities you enjoy the least, that never work quite right no matter how much you wish they would.

Those are also great candidates to push forward on, as they can move from being the activities you hate to activities you look forward to. You don’t have to do it all at once either; try picking one for your next class, and another for the next. It will take a lot of time and thought, but the experience for you of designing, and for your students of doing, are tremendously valuable. You’ll know you’re done when you can’t recognize what you do in your current course compared to what you used to do.

Things are going to get a little messy if you go this way. But I promise you, you will enjoy the process, and the output from your students a whole lot more.

http://www.iddblog.org/?p=2092
SAMR Resources
The SAMR Model

- Puantedura (2006) developed a Substitution, Augmentation, Modification, Redefinition (SAMR) model.
- Designed to help educators identify different ways in which they can integrate technology into teaching and learning practices.
- Puantedura’s model can be considered as a continuum from novice level (substitution) to an advanced, ideal level of technology integration (redefinition) to encourage teachers to seek optimal ways to include technology in learning experiences.

http://www.educatorstechnology.com/2013/06/samr-model-explained-for-teachers.html

http://www.slideshare.net/LenaArena/uni-wollongong-presentation-32923477
Examples of Possible SAMR Tools For PRESENTATIONS

SUBSTITUTION
- PowerPoint presentation
- Google Slides presentation
- Keynote presentation

AUGMENTATION
- Prezi presentation
- Explain Everything
- SlideRocket
- Haiku Deck

MODIFICATION
- Enhance previous presentations with video, audio, hyperlinks, etc.
- Embed widgets or interactive applications

REDEFINITION
- Nearpod Presentation
- Google Hangout
- Google Slides and share with others
- Twitter live chat with staff members

http://www.edutopia.org/blog/samr-model-1-staff-presentations-josh-work
IPAD APP EXAMPLES

http://masedtechie.blogspot.ae/2014/04/integrating-technology-using-samr-model.html
Dr Puentedura spends 7 minutes discussing the SAMR Model here.

Teachers Explaining SAMR Model and an iPad-based Lesson
View iPad Friendly Video
1. Content Area SAMR Examples
2. Miguel's Curated Content in Evernote for SAMR
3. Classroom Learning Activity Rubric
4. The Lost Art of Instructional Design (Blog Entry)
5. Digital Discovery Videos (Blog Entry)
6. Blending Rigor and Relevance with SAMR (Blog Entry)
   1. Rigor&Relevance+SAMR (Image)
7. Video: EC3 Insight #1 - Heritage MS with Krista Gorzel and Deborah Schroeder
8. Video: EC Insight #2 - Sinclair ES with Ms. Zunker and Ms. Johnson
9. Video: EC Insight #3 - Heritage MS with Deborah Schroeder
10. Technological Levels of Use
FYI... CONTROVERSY AROUND SAMR

Some have questioned Ruben Puantedura’s qualifications and his well-known work in Sweden.

Although the model is widely used and loved, not everyone is completely sold on this model. There are several others. SAMR is simple, which is naturally a double-sided coin. “Teaching at higher SAMR levels doesn’t guarantee greater educational benefit. Instead, it more likely results in different educational benefit.” That Time When SAMR Gets Us Into Trouble

The SAMR model is actually said by some to be overly complex to use and too easy to misinterpret. Sean McHugh Article
*which might be interesting to know about but which we will not be using here.
Comparison of TPACK and SAMR MODELS
## Technology Integration Matrix (TIM)

[Image of the Technology Integration Matrix (TIM) with levels and descriptions for each level: Active, Collaborative, Constructive, Authentic, and Goal-Directed.]

### Levels of Technology Integration into the Curriculum

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>Students are actively engaged in using technology as a tool to construct new knowledge and meaning.</td>
</tr>
<tr>
<td>Collaborative</td>
<td>Students use technology tools in collaborative ways that involve working interdependently or as teams.</td>
</tr>
<tr>
<td>Constructive</td>
<td>Students use technology tools to construct new knowledge and meaning. They draw on prior knowledge and construct new knowledge and meaning.</td>
</tr>
<tr>
<td>Authentic</td>
<td>Students use technology tools to fill learning activities for the content and beyond the instructional setting. They also use technology tools in meaningful activities.</td>
</tr>
<tr>
<td>Goal-Directed</td>
<td>Students use technology tools to support learning activities; monitor progress and achieve goals rather than simply completing assignments without reflection.</td>
</tr>
</tbody>
</table>

[Website link: http://fcit.usf.edu/matrix/matrix.php]
iNtegrating Technology for inQuiry (NTeQ)

- Technology as medium, not message:
  - Instructional design model the main focus of which is “to use computer technology to encourage reflection and synthesis of ideas” (Morrison & Lowther, 2005).
  - Tightly integrates technology into the lesson plan where appropriate.

- Standards-based:
  - NTeQ is purposefully mapped to the standards provided by the International Society for Technology in Education
    - ISTE National Educational Technology Standards for students
      - NETS-S (ISTE, 2007)

- Constructivist-based:
  - This is a potential problem point that should be identified and addressed when it exists.
    - Unwillingness exists among some teachers to adapt their classroom practices to more fully integrate technology (Bai & Ertmer, 2008, pp. 94-95).
    - Since integrating new technology requires exploring new ways of learning, a teacher that is unwilling to modify their classroom methods will experience difficulties in integration.

- Further information on the NTeQ model is available at the website: http://nteq.com/
<table>
<thead>
<tr>
<th>Level 0</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4 (A)</th>
<th>Level 4 (B)</th>
<th>Level 5</th>
<th>Level 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-use</td>
<td>Awareness</td>
<td>Exploration</td>
<td>Infusion</td>
<td>Integration: Mechanical</td>
<td>Integration: Routine</td>
<td>Expansion</td>
<td>Refinement</td>
</tr>
<tr>
<td>Use of digital tools and resources in the classroom is non-existent</td>
<td>Digital tools and resources used for classroom and/or curriculum management, to embellish or enhance teacher lectures or presentations, used by students as a reward for prior work completed in class</td>
<td>Digital tools and resources are used by students for extension activities, enrichment exercises, or information gathering assignments</td>
<td>Digital tools and resources are used by students to carry out teacher-directed tasks that emphasize higher levels of student cognitive processing relating to the content under investigation.</td>
<td>Digital tools and resources use is inherent and motivated by the drive to answer student-generated questions that dictate the content, process, and products embedded in the learning experience.</td>
<td>The teacher is within his/her comfort level with promoting an inquiry-based model of teaching that involves students applying their learning to the real world.</td>
<td>More complex and sophisticated use of digital resources and collaboration tools in the learning environment.</td>
<td>Collaborations extend beyond the classroom that promote authentic student problem-solving, no longer a division between instruction and digital tools/resources in the learning environment.</td>
</tr>
</tbody>
</table>

- The **Levels of Teaching Innovation** (LoTi) Framework is a conceptual model to measure classroom teachers implementation of digital-age literacy.
- The LoTi Framework focuses on the balance between instruction, assessment, and the effective use of digital tools and resources to promote higher order thinking, engaged student learning, and authentic assessment practices in the classroom—all characteristics of 21st Century teaching and learning.
Pedagogy Wheel
This presentation can be viewed at

https://goo.gl/aOHA0h

capitals, Os and Zeros matter