Authentic Use of Technology: SAMR

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Time Frame 2-3 hours

Essential Question(s)

How can a technology-enriched learning community increase student engagement and academic performance and prepare students for postsecondary opportunities?

Summary

This professional development session focuses on instilling an understanding of the frameworks of authentic learning as well as the SAMR (Substitution, Augmentation, Modification, Redefinition) model for technology. Participants will apply these practices to the authentic use of technology in their classrooms. This interactive session will give participants the tools they need and provide the opportunity to create lesson activities using technology to increase students' depth of knowledge, engagement, and academic performance.

Learning Goals

- Participants will experience an authentic activity that integrates technology and reflect on this experience to determine the relevant components of authenticity.
- Participants will differentiate types of assignments that fit into the SAMR model.
- Participants will apply their understanding of the modeled technology and use a chosen tool to create a classroom activity.

Attachments

- Authentic Lesson Reflection Tool—Authentic Use of Technology SAMR.pdf
- Authenticity Framework Reading—Authentic Use of Technology SAMR.pdf
- Card Sort Answer Keys—Authentic Use of Technology SAMR.docx
- Card Sort Answer Keys—Authentic Use of Technology SAMR.pdf
- Chrome Apps and Tech Tools Shared Doc—Authentic Use of Technology SAMR.docx
- Chrome Apps and Tech Tools Shared Doc—Authentic Use of Technology SAMR.pdf
- Instructional Strategy Note Sheet—Authentic Use of Technology SAMR.docx
- Instructional Strategy Note Sheet—Authentic Use of Technology SAMR.pdf
- Lesson Snapshot Sample for ELA—Authentic Use of Technology SAMR.docx
- Lesson Snapshot Sample for ELA—Authentic Use of Technology SAMR.pdf
- Lesson Snapshot Sample for Math—Authentic Use of Technology SAMR.docx
- Lesson Snapshot Sample for Math—Authentic Use of Technology SAMR.pdf
- Lesson Snapshot Sample for Science—Authentic Use of Technology SAMR.docx
- Lesson Snapshot Sample for Science—Authentic Use of Technology SAMR.pdf
- Lesson Snapshot Sample for Social Studies—Authentic Use of Technology SAMR.docx
- Lesson Snapshot Sample for Social Studies—Authentic Use of Technology SAMR.pdf
- Personal Topic SAMR Handout—Authentic Use of Technology SAMR.docx
- Personal Topic SAMR Handout—Authentic Use of Technology SAMR.pdf
- Presentation Slides—Authentic Use of Technology SAMR.pptx
- SAMR and DoK Chart Color-Coded on 11x17—Authentic Use Of Technology SAMR.docx
- SAMR and DoK Chart Color-Coded on 11x17—Authentic Use Of Technology SAMR.pdf

Materials

- Presentation Slides (attached)
- Instructional Strategy Note Sheet (attached)
- Authenticity Framework Reading handout (attached)
- Authentic Lesson Reflection Tool handout (attached)
- Card Sort Answer Keys document (attached)
- Personal Topic SAMR handout (attached)
- SAMR and Depth of Knowledge (DoK) document (attached)
- Lesson Snapshot Samples (attached; one for each content area)
- Sentence-Word-Phrase shared Google doc
- Sticky notes

Engage

Presenter's Note: Session Preparation

Print and prepare all materials and handouts before beginning the session. The Instructional Strategies Notes Sheet and sticky notes can be placed on tables for participants to pick up, but hold all other handouts until prompted for use in the activity. Additionally, make a Padlet page for participants to use collaboratively during the Engage activity. Add the link to the Padlet on slide 4 in the presentation.

Begin the session using the attached **Presentation Slides** and inform participants that this session will about integrating technology in an authentic way. They will learn how the authentic use of technology can positively affect student engagement and academic performance and get some tools for integrating authentic technology in their own classrooms.

Display **slide 3** and encourage participants to take notes on the **Instructional Strategy Note Sheet** throughout the presentation. New instructional strategies will be modeled in the session, and this sheet will provide a great way for them to reflect on how they might use these strategies in the future.

Transition to **slide 4**, titled "Preflection." Tell participants: *We are going to begin with a question that will help you tap into your prior knowledge about technology. Then, we'll share our ideas about the purpose of technology.*

Guide participants to the Padlet activity and ask participants to respond to the question: *What's the purpose of technology?*

Allow 5–10 minutes for participants to record their responses in the app. You may choose to make responses in the Padlet anonymous. Participants can work in groups or respond individually. After everyone has had a chance to complete the activity, invite participants to share out their answers.

Possible Responses

Some possible responses include: "Better communication," "To make things easier," "Connections to the world," "Collaboration," and "Convenience," among others.

On **slide 5**, introduce the essential question: *How can an authentic, technology-enriched learning environment increase student engagement and academic performance?* Guide participants to think about how this question might apply to preparing students for postsecondary opportunities.

Go to **slide 6** and review each session objective. Participants will become familiar with the components of authenticity, learn about the SAMR model, and create a classroom activity that they can take with them.

Explore

Presenter's Note: Activity Preparation

Create a Google document and share the link with participants for use in the Sentence-Phrase-Word activity. At the top of the first page, enter the text, "Add your SENTENCE, PHRASE, and WORD for Authenticity below." Add a second page; at the top of this page, enter the text, "Add your SENTENCE, PHRASE, and WORD for SAMR below."

Transition to **slide 7** and ask participants to form small groups. Pass out copies of the attached **Authenticity Framework** reading. Using the Jigsaw strategy, ask each participant within a group to take ownership of one of the components of authenticity—Construction of Knowledge, Disciplined Inquiry, Real-World Connections, or Student-Centered Learning—and become the "expert" for that portion of the reading. When they have finished reading, have each expert share the key takeaways or main idea of the section with the group. Allow 10–15 minutes for this activity.

Go to **slide 8** and introduce the Sentence-Phrase-Word strategy. Within each group, ask participants to identify a sentence that was meaningful, a phrase that moved them, and a powerful word from the reading. Ask members of each group to record their group's three responses in the shared Google document. Take a look at the responses as a whole group and share out reflections on the common themes. Ask participants: *What responses speak to you? What are the implications for classroom learning?*

Go to **slide 9** and introduce the video, titled "SAMR in 120 Seconds." Ask participants to repeat the Sentence-Phrase-Word strategy with the video content, recording one sentence, phrase, and word on a sticky note as they watch. After the video, go to **slide 10** and have participants record their sticky note responses in the shared Google document.

Explain

Transition to **slide 11** and pass out copies of the attached **Personal Topic SAMR** handout.

Ask participants to think of a topic or subject they know really well. Give participants a few moments to think of an answer, and then ask them: *What is the simplest form of that topic that almost anyone would or could recognize? What is the highest or most complex form of that topic? Next, what are two representations of the topic that fall in between the simplest and most complex forms?*

Allow a few moments for participants to fill out the handout.

Possible Responses

One participant might choose gardening as a topic. The simplest form might be planting a seed and waiting for it to grow. The most complex form might be an industrial farm that uses irrigation equipment, complex soil analysis, and harvesting implements. In between might be a personal backyard vegetable garden and a small family-owned organic orchard.

If another participant chose sports as a topic, the simplest form might be a footrace between two children. The most complex form might be the Olympics. In between might be organized intramural competitions and high-paying professional sports.

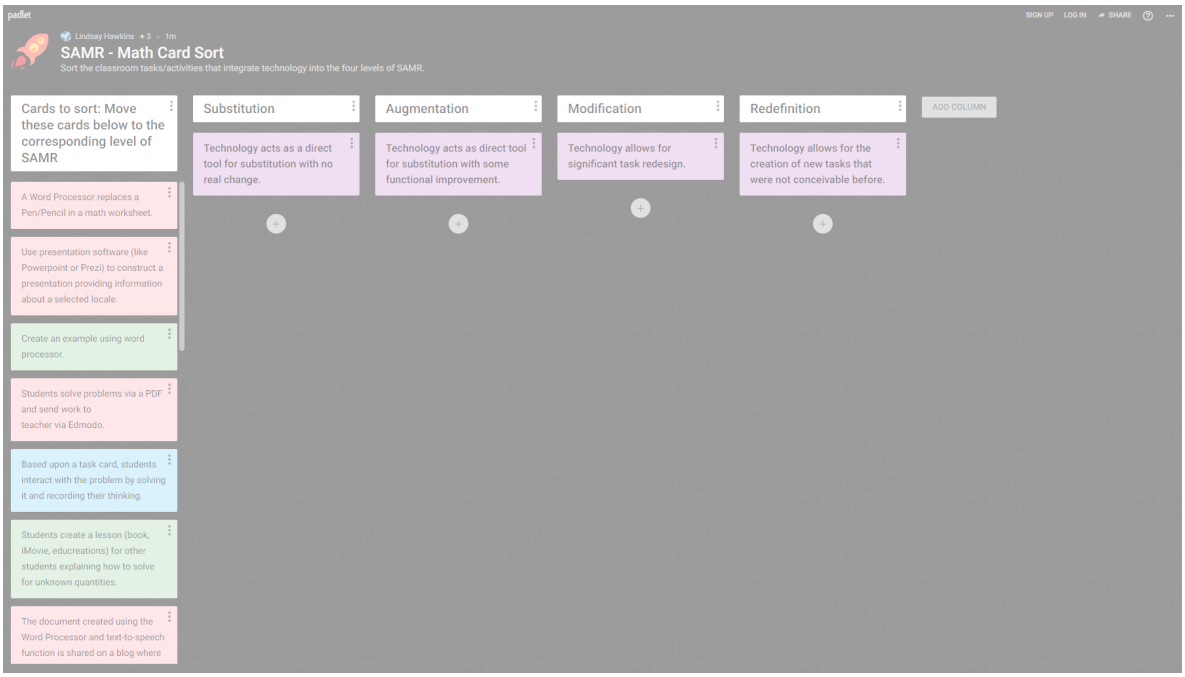
Encourage participants to think about how they arrived at the deeper understanding of their topic. Within their own minds, they had to research, synthesize, and create in order to arrive at a hierarchy that gave them a deeper understanding.

Transition to the SAMR coffee cups on **slide 12**. Point out how the SAMR model progresses technology integration from its simplest form (Substitution) to its most complex form (Redefinition), just as each of them progressed their topics through iterative stages.

Transition to the SAMR water exploration graphic on **slide 13**. This example provides an even deeper dive into the SAMR model. It illustrates the integration of technology in its simplest form—doing what you've always done but with technology—to its most complex, which is doing what cannot be done without technology. The first two SAMR stages (Substitution and Augmentation) serve to enhance learning, while the latter two stages (Modification and Redefinition) transform learning.

Presenter's Note: Activity Preparation

We have created links to four Padlets, one for each content area: Math, Science, ELA, and Social Studies. Choose one of the Padlets specific to the content area of your participants, or allow them to choose one. Before starting this activity, reset the Padlet so that only the purple definition cards appear in the Substitution, Augmentation, Modification, and Redefinition columns. (See screenshot below.) Mix up the other cards under the “Cards to sort” column. Use the attached **Card Sort Answer Keys** as a reference guide.



Reset the Padlet to look like this prior to assigning the Card Sort activity.

Using a modification of the Card Sort strategy on **slide 14**, have participants open one of the Padlet links and sort varying types of technology-assisted activities into their appropriate SAMR categories. Participants can work individually or in small groups to discuss and decide where each task falls on the SAMR model. After everyone has finished, share the answer key and go over the responses.

Presenter's Note: Word Cloud Creation

While participants are working on the Card Sort activity, cut and copy the words and phrases they recorded about Authenticity and SAMR in the Sentence-Word-Phrase activities into a word cloud generator, such as this one from ABCya. Generate a word cloud to use as an example in the next activity. You can paste an image of this word cloud on slide 15.

Introduce the Word Splash strategy on **slide 15**. Show participants the word cloud you generated using the words and phrases they recorded after reading about the Authenticity Framework and watching the SAMR video.

Ask participants to take a look at the top five to seven words. Then, ask participants to write a statement consisting of two or three sentences that use these words to explain how technology can be used authentically in the classroom. Have participants share out these sentences and think about where these uses fall on the SAMR model.

Possible Responses

The generated word cloud might contain words like disciplined, choice, construct, real-world, shared, and engaged. Possible responses might be: "Students use Google docs to construct a shared set of ideas for how to solve a real-world problem, such as immigration," or "Students use Padlet to organize information for a research paper," or "Chromebooks keep students actively engaged in learning and allow them to demonstrate their knowledge in different ways."

Transition to **slide 16** and pass out the attached **Authentic Lesson Reflection Tool**. This tool is used to provide detail in discussing the four components of authentic learning. Ask participants to consider within their groups where this session on SAMR has been strong and where it may be lacking with regard to the components. Allow participants to share out their feedback.

Transition to **slide 17** and remind participants to take a few moments to jot down their thoughts about the strategies they've used today. On the Instructional Strategy Note Sheet, they can record how each strategy was used to promote authentic learning, along with ideas about how they might use the strategy to do so in their own classrooms.

Extend

Presenter's Note: Lesson Snapshots by Subject Matter

Attached are four **Lesson Snapshot Samples** for different content areas (ELA, math, science, and social studies). Depending on your participants' content areas, they can use one of these documents, along with the attached color-coded **SAMR and DoK** document, in the upcoming activity to practice designing tech activities for each SAMR level. Be sure to print the SAMR/DoK documents on 11" x 17" paper and in color.

Go to **slide 18**, titled, "Upcoming Content." Have participants choose a topic or concept for which they would like to design a task at each level of critical thinking/tech integration. Introduce the attached color-coded **SAMR and DoK** document. This document gives examples of critical thinking skills and corresponding levels of tech integration. Transition through **slides 19–22**, allowing participants time on each level to design a task for their chosen topic.

Possible Responses

Let's say a participant chose the topic of Multiplication. At the Substitution level, a task might be to use a digital worksheet or calculator to practice multiplication facts. At the Augmentation level, students might use a shared Google Sheet (spreadsheet) to fill in blank cells with the missing multiplier in a formula (e.g., 4 x _ = 20). At the Modification level, students might play online math games aimed to enhance multiplication skills, such as those at multiplication.com. At the Redefinition level, students might work in teams using an online quiz creator to create an assessment of multiplication fact knowledge.

Evaluate

Transition to the evaluation on **slide 23**. Circle back to the Preflections from the beginning of the presentation, when participants accessed prior knowledge about the purpose of technology. Pull up the Padlet from the Engage activity or remind participants of some of their answers.

Ask participants: *Given your learning today, which of these Preflections support the type of environment described in the essential question: How can an authentic, technology-enriched learning environment increase student engagement and academic performance?*

Allow participants to share out their thoughts about the relationship between technology integration and student engagement and academic performance, as well as the potential for postsecondary education (PSE).

Follow-up Activities

Ask participants to find and use lessons on the K20 Center LEARN site that support authentic learning and digital game-based learning programs to support technology integration in the classroom.

Research Rationale

Authenticity can be implemented in all content areas and all grade levels. Authentic teaching has four components, construction of knowledge, disciplined inquiry, value beyond school, and student-centered learning. These four components are created and apparent through authentic tasks. Authentic tasks defined by Herrington, et al. (2014), are ill-defined, requiring students to define the tasks and subtasks needed to complete the activity. They are investigated by students over a sustained period of time. Tasks can be applied to different subject and content areas and lead with opened-ended outcomes. These tasks are seamlessly integrated with assessment and create accomplished products valuable in the student's own right. They allow for competing solutions and a diversity of outcomes. Authentic lessons allow opportunities for collaboration, which leads to the exploration of multiple perspectives and various points of view to be heard during a lesson. By forming collaborative groups, students are able to construct knowledge. Through the use of essential, open-ended questions, teachers provide the opportunity for students to reflect and articulate thoughts and the processes of their learning. "Authentic learning environments need to provide collaborative learning where, for example, more able partners can assist with scaffolding and coaching, and where teachers provide appropriate learning support" (Herrington,2014; Collins et al., 1989; Greenfield, 1984). Herrington et al. describe the four components in an authentic lesson as follows: 1) Students should seek to solve a real-life problem to which they would attach emotional commitment as well as a cognitive interest; 2) The problem should be sufficiently open-ended so that there are a variety of strategies for its solution; 3) The problem-solving strategies and "solutions" developed should encourage students to change their actions, beliefs or attitudes; and 4) The problem should have a real audience beyond the classroom. Authentic tasks are more worthy of the investment of time and effort in higher education than decontextualized exercises and tasks (Herrington & Herrington, 2006).

Resources

- Candace M. (2013, May 30). SAMR in 120 Seconds [Video]. YouTube. https://www.youtube.com/watch?v=us0w823KY0g
- Collins, A., Brown, J. S., & Newman. S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In L. B. Resnick (Ed.), Knowing, learning and instruction: Essays in honour of Robert Glaser (pp. 453-494). Hillsdale, NJ: LEA.
- Greenfield, P. M. (1984). A theory of the teacher in the learning activities of everyday life. In B. Rogoff & J. Lave (Eds.), Everyday cognition: Its development in social context (pp. 117-138). Cambridge, MA: Harvard University Press.
- Herrington, A., & Herrington, J. (2006). Authentic learning environments in higher education. Hershey, PA: Information Science Publishing.
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- K20 Center. (n.d.). Card sort. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f506976b
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- K20 Center. (n.d.). Word Splash. Strategies. https://learn.k20center.ou.edu/strategy/fe96d3de46cfdc1f385aab7e7500a888