



Transitioning to Digital-Age Teaching & Learning

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Alignment to Learning Forward Standards

- The new education law, Every Student Succeeds Act (ESSA), redefines professional development with a purposeful influence from Learning Forward.
- Learning Forward, a national association recognized as leaders in professional learning, has established standards for professional learning that set a high bar for quality learning experiences.
- This session aligns to the following standards:
 - Leadership
 - Resources
 - Learning Designs
 - Implementation
 - Outcomes

History of Computing in Education

Computer Lab Once a Week



Computers at Station
in Classrooms



Devices in Students' Hands



Why One Device Per Student?

- Personalized Learning
- Competency-Based Learning
- Preparing students for the modern workforce
- Teaching Digital Citizenship
- 2016 ISTE Student Standards for Technology Use in Education

Background: 2016 ISTE Standards

- ISTE is the International Society for Technology in Education
 - Oklahoma adopted, via legislation, the 2007 ISTE Technology Standards
 - The 2016 standards have not been officially adopted yet; however, they are good standards to follow
 - There are 7 new standards for today's students

2016 ISTE Student Standards

1. Empowered Learner

- Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

2. Digital Citizen

- Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

2016 ISTE Student Standards

3. Knowledge Constructor

- Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

4. Innovative Designer

- Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

2016 ISTE Student Standards

5. Computational Thinker

- Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

6. Creative Communicator

- Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

2016 ISTE Student Standards

7. Global Collaborator

- Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

For more information:

<http://www.iste.org/standards/standards/for-students>

SAMR Model for Technology Integration

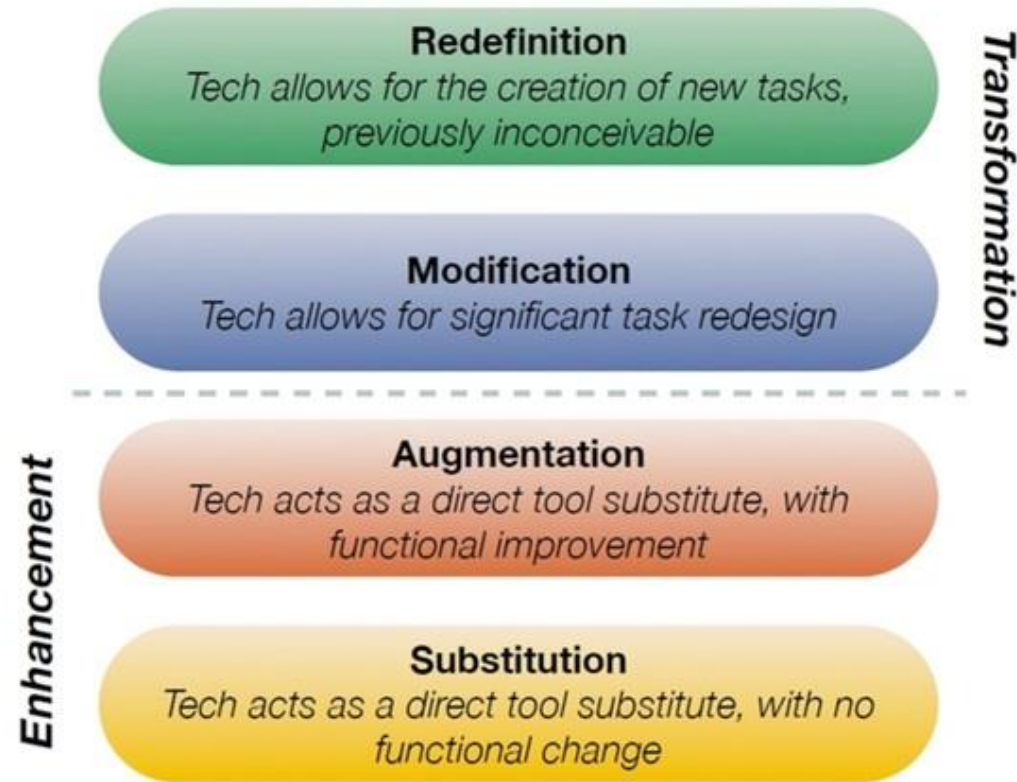
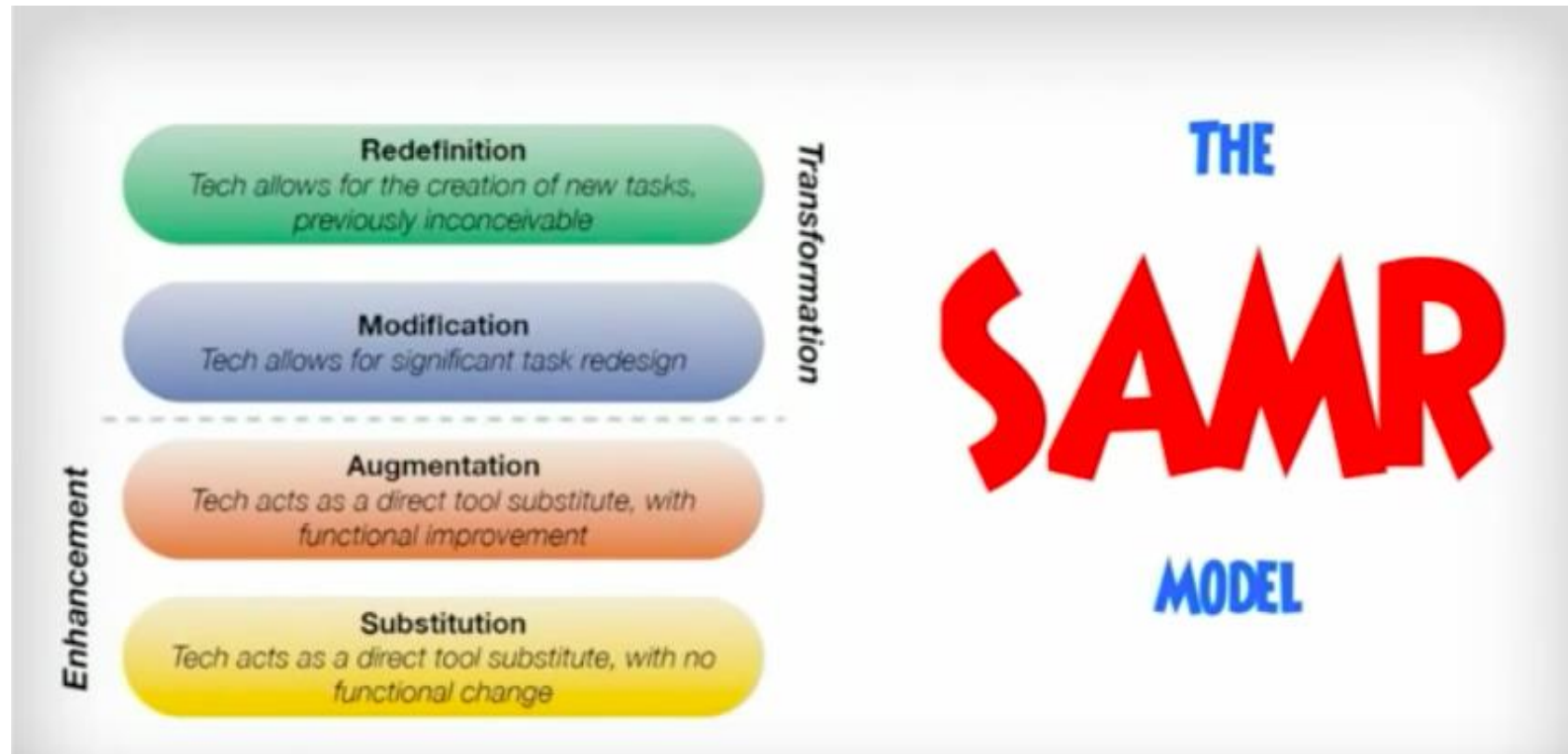


Image by Dr. Ruben Puentedura, Ph.D. <http://www.hippasus.com/rrpweblog/>

SAMR – Explained by Students



<https://www.youtube.com/watch?v=OBce25r8vto&feature=youtu.b>

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Two Ways to Move to Student Devices

- Carts for Classroom Use as Needed
 - Start with one cart per school and then keep adding carts
- 1 to 1 Devices for All Students
 - A. School-Owned Devices
 - B. Bring Your Own Device (BYOD) – student owned devices
 - C. Combination of School-Owned and BYOD

Okedtech Stats – Districts with Carts

- 289 districts have device carts
 - 175 with Windows carts
 - 150 with Chromebook carts
 - 141 with tablet (iPad/Android) carts
 - 36 with Mac carts
 - 4 with Linux carts
- Carts by school type
 - Elementary: 224 districts
 - Middle School: 200 districts
 - High School: 213 districts

OKedtech Stats – 1 to 1 Devices (school owned)

- 15 districts have 1 to 1 devices in all grades
 - Largest district: Enid – 8,028 students
 - Smallest district: Yarbrough – 105 students
- 127 districts have at least one grade with 1 to 1 devices
- Some larger districts have some schools with all grades 1 to 1
 - Oklahoma City Public Schools: Arthur ES & Roosevelt MS
 - Putnam City Schools: Hilldale ES, etc.

CoSN K-12 IT Leadership Priorities

Priorities	2013	2014	2015	2016	2017
#1	BYOD	Assessment Readiness	Assessment Readiness	Broadband & Network Capacity	Mobile Learning
#2	Assessment Readiness	Mobile Learning	Wireless Access	Wireless Access	Broadband & Network Capacity
#3	Broadband Access	Wireless Access	Mobile Learning	Mobile Learning	Cyber Security

- BYOD has dropped off the list
- Mobile Learning has moved up to first place

Source: <http://www.cosn.org/>

School Owned vs. BYOD

- Positives of BYOD

- Less expensive for the district
- Device is the student's personal device
 - Will use it during school and at home
 - May increase self-directed learning
 - Might take care of it more

- Negatives of BYOD

- Equity of access
- Non-conformity for instruction
- Personal devices might lead to more distractions
- Possible issues with online assessments

OKedtech Stats – WiFi Networks

- 196 districts allow students to connect personal devices
 - If you are not one of those districts, it's time to open up your network
 - But still keep it secured and filtered
- You might need more bandwidth
 - Make sure you are asking for enough E-Rate funding
 - Category 2 E-Rate funding can help pay for WiFi networks

Types of Devices - Laptops

- “20th Century” Laptop Computers
 - OS: Mac, Windows or Linux
 - OS Updates: infrequent; free for Mac & Linux, paid for Windows?
 - Software: broad selection with prices anywhere from free to \$100+
 - Software upgrades: infrequent and typically cost money (changing trend)
 - Designed to be shut down when not in use (unless plugged in)
 - Slow boot compared to other devices
 - Typically requires plug-in for all-day use
 - Windows devices may not have front-facing camera or microphone
 - Designed for local storage but can use cloud services
 - Anti-virus may be needed
 - Internet connection not required
 - Designed for mouse and/or trackpad

Types of Devices – Windows Surface

- Windows Surface (“20th Century” OS in 21st Century Form)
 - OS: Windows
 - OS Updates: infrequent and may cost money
 - Software: broad selection with prices anywhere from free to \$100+
 - Software upgrades: infrequent and typically cost money (changing trend)
 - Designed to be shut down when not in use (unless plugged in)
 - Slow boot compared to other devices
 - Typically requires plug-in for all-day use
 - Front-facing and rear-facing cameras; microphone included
 - Designed for local storage but can use cloud services
 - Anti-virus needed
 - Internet connection best but not required
 - Designed for touch and trackpad (mouse possible)

Types of Devices – Chromebooks

- Chromebooks
 - OS: ChromeOS
 - OS Updates: very frequent and free
 - Software: Chrome browser and Chromium “web apps” / Android apps
 - Software upgrades: N/A / Android apps – frequent and free
 - Quick boot
 - Battery designed for all-day use
 - Front-facing camera; microphone included; may have swivel camera
 - Designed for cloud storage / minimal local storage
 - Internet connection typically required / some offline use
 - Designed for trackpad; newer ones have touch (mouse can be added)

Types of Devices – Tablets – part 1

- “21st Century” Computers/Devices
 - OS: iOS & Android
 - OS Updates: frequent and free
 - Software: broad selection with prices from free to usually less than \$10
 - Software upgrades: frequent and free; sometimes have new versions
 - Front-facing and rear-facing cameras; microphone included
 - Designed for cloud or local storage
 - Anti-virus not needed
 - Internet connection requirements depend on specific applications



Types of Devices – Tablets – part 2

- Features that set tablets apart from the rest:
 - Designed to be always on; rarely need to reboot
 - Truly mobile – light-weight, designed to be carried around
 - All have rear-facing cameras for recording events, experiments, etc.
 - Can have cellular service for ubiquitous internet access
 - 1,000s of educational software titles that engage students
 - Designed for touch input – for drawing, etc.
 - Designed for all day or multi-day use
 - Accelerometer for landscape and vertical use
 - GPS, gyroscope, barometer, ambient light sensor, etc.
 - Fingerprint login / facial recognition coming soon
 - Comes in sizes from smartphones to larger tablets
 - Great for reading books, viewing videos, etc.



Ideal Digital Learning Classroom Setup

- Large screen TV – no need for touch
- Apple TV or Google Chromecast
- One to One touchscreen tablets in students hands
- Touchscreen tablet for teacher

A Note about Cloud Storage

- Google Drive vs. OneDrive or iCloud
 - For Google Drive, a student must use “Google Takeout” to move files from the school Google account to a personal Google account
 - Some files cannot be moved (ex. photos in “Google Photos”)
 - For OneDrive or iCloud, the student can just move all files to a personal storage device or use cloud services such as Dropbox
- Google document vs. Microsoft or Apple document
 - Google documents cannot exist in their native form except on Google’s servers
 - Microsoft or Apple documents can exist outside of Microsoft or Apple servers

Questions???

Thank you!

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