Rethinking Technology Integration in the Classroom
TPACK Model

The TPACK Framework

Pedagogical Knowledge (PK)

Content Knowledge (CK)

Technological Knowledge (TK)

Pedagogical Content Knowledge (PCK)

Technological Pedagogical Knowledge (TPK)

Technological Pedagogical Content Knowledge (TPACK)

Contexts

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The main idea of TPACK is to understand how to use technology to teach concepts in a way that enhances student learning experiences.

It removes the idea of teaching with technology for technology’s sake.
The “SAMR” Model
Technology integration within a classroom typically moves through 4 levels. Teachers should attempt to use their instructional technology at the highest level possible in order to achieve the best educational benefit from their technology.

The “SAMR” Model

SUBSTITUTION
Technology acts as a direct substitute, with no functional change

AUGMENTATION
Technology acts as a direct substitute, with functional improvement

MODIFICATION
Technology allows for significant task redesign

REDEFINITION
Technology allows for the creation of new tasks, previously inconceivable
Original Activity:
Students formulate various questions about landforms using images of landforms from regions of the United States.

Substitution:
Students formulate various questions in a Google Doc about landforms using a Google Tour Builder interactive tour of the regions of the United States.
Substitution Example
Original Activity:
Students take notes using a pen and paper. They then are asked to compose a summary of their notes on the paper.

Substitution:
Students complete the same notes and summary activity in a digital format using Microsoft Word or Google Docs.
Original Project:
Students create a business card and pitch presentation of a shoe design for a Parkour athlete.

Augmentation:
Students use programs such as Canva or Google Drawings to create a business card that links to a pitch presentation of their teams shoe design for a Parkour athlete.

Augmentation:
Students use Google Keep to plan their pitch presentation outline and work on their presentation through a shared Google Slide file.
Augmentation Examples

- Canva: Empowering the world to design.
- AIKIDO: Soles of Stealth - A Step into the Future of Parkour
- Keep: Take a note...
Original Project:
Students are asked to determine the distance between Boston and London using an atlas following the events of the Boston Tea Party.

Augmentation:
Students use an online map resource to determine the distance between the two cities. The mapping application also allow extension activities such as satellite images.

www.distance.to
Original Lesson
Students in a business class watch various videos about the effects of counterfeit goods and have group discussions about the impacts of counterfeit goods.

Modification:
The teacher “flips” the lesson, having the students watch at home as homework using EdPuzzle assigned through Google Classroom. The video stops at various points with questions inserted from the teacher that the students use to reflect on the video.

Modification:
Students use class time in a collaborative backchannel discussion through Padlet, Formative, GoSoapBox, or Google Classroom on the impacts of counterfeit goods.
Modification Examples
Modification Examples

**Combat Counterfeit Goods**

Based on the various videos and resources provided to you, how has your opinion changed about counterfeit goods. Respond to at least two other students.

- **Anonymous 1222**
  Before watching the videos, I did not realize that counterfeit goods caused fires, skin rashes and even resulted in death.

- **Anonymous 1223**
  I will think twice about buying certain goods at flea markets as that is one of the main places that counterfeit goods exist.
Original Lesson
Students learn about chemical compounds by looking at a periodic table and writing down compounds using a pencil.

Modification:
The teacher utilizes instructional technology to engage hands on learning, facilitate collaboration, and assess student learning. Students utilize an interactive board or display to “touch and feel” each element in the compound. They also collaborate on mobile devices bring the content to life. The teacher can also assess student growth using this technology.
Original Project
Students read the Town Mouse Country Mouse book. They compare/contrast city life to country life by communicating with another school via pen pal letters.

Redefinition:
Students connect with another class (country or city) through Google Hangouts, Zoom, or Skype to ask them various questions about their area. They present their area through a shared Google Presentation students worked on together.

Redefinition:
Students continue to connect and share information about their area by leaving videos for each other through a shared code using Flipgrid.
Redefinition Examples
Redefinition Examples

Grade 4 students providing professional development to teachers from North Carolina. Students were teaching them how to facilitate a Guess the State Project as the students participated with the teachers.
Original Project
Students complete a series of traditional paper and pencil activities during a unit.

Redefinition:
Students work at their own pace using online resources and directions found on their teacher’s website. Students discover and engage in content using interactive resources. Students create and share their own digital portfolios within the content to demonstrate what they have learned and teach others.
TPACK

Content
The “What”

Pedagogy
The “How”

How does technology support the two?
TPACK- Math Classroom

Design a Park Project

Content: Area/Perimeter

Technology to Support: Google Apps for Ed; Tinkercad

Pedagogy: Project Based Learning (Inquiry)
How are Landforms Created?

Content: How are Landforms Created?

Technology to Support: Mimio View Document Camera; video program

Pedagogy: Student Group Work and Collaboration
Simple TPACK Resources

**TPACK.org**
Framework and other resources such as newsletters, TPACK at conferences, and TPACK tutorials.

**Using TPACK as a Framework for Technology Integration**
Webinar from Steven Anderson

**PBL Works**
Created by the Buck Institute for Education provides research and resources centered around project-based learning

**Boxlight.com**
Best instructional technology products on the market
SAMR - How to Get Started

1. Take inventory of your available technology
2. Choose a topic and plan a traditional lesson
3. Find ways to make lesson better using SAMR
4. Don’t be afraid to try something new
Simple SAMR Resources

**Blendspace**
Give students resources to choose from in order to discover and explore content

**Livebinders**
Students can create and share their own content with others

**Boxlight**
Best instructional technology products on the market

**Google Classroom**
Explore, create, and share content
Boxlight Webinar Series
Blogs  https://blog.mimio.com/

SEE HOW SAMR WORKS IN REAL CLASSROOMS
Substitution, Augmentation, Modification, and Redefinition

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