Memphis School of Excellence Technology Integration Guide

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Goal: To support teachers in effectively integrating technology into daily instruction to increase student engagement, collaboration, and academic achievement through student-centered learning experiences

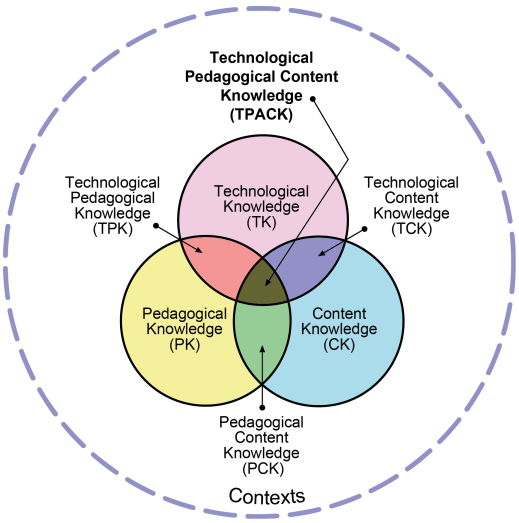
Why technology integration matters

Technology alone does not transform learning. The impact comes from **how teachers use technology to support strong instruction, meaningful learning experience, and student ownership**. Effective technology integration can help students achieve:

- ★ Collaborate with peers
- ★ Communicate ideas for a variety of purposes using the tools appropriate to their goals.
- ★ Think critically, solve problems, and design solutions
- ★ Connect learning to real-world experiences
- ★ Understand how to use and analyze data
- ★ Have agency to self-pace and express themselves creatively
- ★ Learn how to find and utilize information to build knowledge and support claims
- ★ Receive feedback and monitor progress

The TPACK Framework: Plan With Purpose

Before choosing a technology tool, consider the connection between **Content, Pedagogy, and Technology**. How do content, teaching strategies, and technology work together to increase engagement?



TPACK Components	Teacher Reflection Question
Content Knowledge (CK)	What standard or skill do students need to learn?
Pedagogical Knowledge (PK)	What teaching strategy will best support student learning?
Technology Knowledge (TK)	What technology tool will enhance this learning experience?

Technology Integration Decision Guide

Selecting Technology Based on Learning Strategies & Student Engagement Goals. Technology should support the learning strategy, not replace effective teaching practices.

Start with this question: What do you want students to do?

Learning Strategy	Student Learning Goal	Technology Tools	Student Engagement Outcome
Activate Prior Knowledge	Students recall previous learning, make connections, and prepare for new content.	Kahoot!, Nearpod, Google Forms, Padlet, Coggle	Increased participation, student thinking activated, teacher identifies prior knowledge
Collaborative Learning	Students communicate, discuss ideas, and work together to solve problems.	Google Docs, Google Slides, Padlet,, Coggle, Miro, social annotation tools, Net.Create	Communication, teamwork, peer learning, shared responsibility
Inquiry-Based Learning	Students ask questions, investigate, analyze information, and develop explanations.	STEMscopes, CODAP, digital simulations, research databases, virtual labs	Curiosity, investigation, critical thinking, problem solving
Project-Based Learning (PBL)	Students apply knowledge to create solutions or real-world products.	Canva, Google Sites, Google Slides, MIT App Inventor, Net.Create, CODAP, podcast creation tools, video creation tools, Coggle	Creativity, student ownership, authentic learning experiences
Differentiated Learning	Students access learning experiences based on their individual needs and readiness levels.	IXL, Progress Learning, STEMscopes, adaptive learning platforms	Personalized learning, confidence, growth, increased access
Formative Assessment	Students demonstrate understanding and	Wayground, Kahoot!, Google Forms, Mastery	Immediate feedback, active participation,

	receive feedback during learning.	Connect, Coggle, social annotation tools,	identification of misconceptions
Discussion Based Learning	Students explain thinking, respond to peers, and develop academic language.	Padlet, social annotation tools, Google Classroom discussions, Flipgrid, Miro, Coggle	Student voice, communication, deeper understanding
Creative Learning	Students demonstrate understanding through original products or designs.	Canva, Google Slides, MIT App Inventor, podcast creation tools, Adobe Express, Google Sites, Scratch, Teachable Machine	Creativity, ownership, communication of ideas
Problem-Based Learning	Students analyze challenges and develop evidence-based solutions.	CODAP, simulations, research tools, collaborative documents	Critical thinking, decision-making, real-world connections
Reflection and Metacognition	Students evaluate their learning and identify areas for growth.	Google Forms, digital journals, Padlet, Google Docs, Coggle, Miro	Self-awareness, goal setting, student ownership
Independent Practice	Students practice skills and monitor their progress.	IXL, Progress Learning, STEMscopes, digital assignments	Student responsibility, skill development, personalized support
Presentation and Communication	Students share learning with an audience and explain their thinking.	Google Slides, Canva, Google Sites, video tools, podcast creation tools	Confidence, communication skills, authentic demonstration of learning

See the Tech Tool Library (Appendix A) for more

Appendix A: Tech Tool Library

Here you can find technology tools and platforms organized by tool type and learning strategy.

By Tool Type

- **Block-based coding and computer science**
  - Scratch—Storytelling, animation, game design
  - MIT App Inventor—Students can design and create apps using block-based coding
  - Teachable Machine—Allows youth to train machine learning models with sounds, images, etc

- **Data tools**
  - Net.Create—Data visualization
  - CODAP—Data science tool
    - Example of using CODAP with students to explore data from Japanese internment camps (history application)

- **Podcasting**
  - Student podcasting guide
  - Audacity—Sound editing software for music and podcast creation

- **Mind mapping, digital whiteboards, and collaborative documents/ platforms**
  - Coggle—Mind mapping (individual or collaborative)
  - Miro—Digital whiteboard, collaborative
  - Padlet
  - Google Docs
  - Google Slides
  - Google Sheets
  - Microsoft Teams
  - Slack

- **Annotations**
  - Social annotation—Students can collaboratively annotate the same PDF and see and respond to each other's thoughts, ideas, and questions. Promotes discourse and collective learning.
    - Hypothes.is—Social annotation
    - NowComment—Social annotation

- **Learning Games**
  - Kahoot!—Create or use community-made multiple-choice quizzes

    - Wayground—Engages students with game-like features
    - Blooket—Game-based learning platform
    - Quizlet—Incorporates game modes like Match and Gravity to help students learn vocabulary and terminology
    - Minecraft: Education Edition—A game-based learning platform

- **Visual Design**
    - Canva for Education—Presentations, infographics, and whiteboards
    - Adobe Express—AI-powered templates and simplification of complex video, image, and web page design
    - Kittl—Illustrations, vector graphics, and detailed typography
    - Krita—Painting
    - Blender—3D creation
    - Tinkercad—3D design, electronics, and coding

- **Instructional Videos**
    - Study Jams—Introduce and reinforce math and science topics with videos, slideshows, step-by-step tutorials, and other activities
    - Khan Academy—Free platform offering high-quality video lessons, practice exercises, and AI-powered learning assistants
    - PBS Learning Media—Provides curriculum-aligned videos, media galleries, and lessons spanning science, history, and the arts
    - Brain POP—Uses animated stories, movies, and interactive activities to make subjects engaging for elementary and middle schoolers

By Learning Strategy

Activate prior knowledge	**Collaborative Learning**	**Project-Based Learning (PBL)**
• Padlet • Mentimeter • AnswerGarden • Kahoot! • Wayground • Quizlet • Blooket • Google Classroom • Moodle • Coggle	• Google Docs • Google Slides • Google Sheets • Padlet • Miro • LearnWorlds • Microsoft Teams • Slack • Coggle • Social annotation tools • Net.Create • Kahoot! • Wayground • Quizlet	• PBL Works • Allele • Minecraft Education • MIT App inventor • Net.Create • CODAP • Podcast creation tools • Coggle • Google Classroom • Miro • Wakelet • Kami • Perplexity • Canva • Google Docs

		• Google Slides • Google Site • Abode Express
Inquiry-Based Learning • Gizmo • Toddle • Discovery Education • Parlay Ideas • CODAP • STEMscopes	**Discussion-Based Learning** • Social annotation tools • Google Classroom • Nearpod • Padlet • Flipgrid • Kialo Edu • Perusall • Miro • Coggle	**Formative Assessment** • Progress Learning • Mastery Connect • Nearpod • Formative • Kahoot! • Wayground • Pear Deck • Quizlet • Coggle • Social annotation tools
Differentiated Learning • Progress Learning • Khan Academy • IXL • Wayground • Pear Deck • Prodigy Math • Newsela • Lexia Core5 Reading	**Creative Learning** • Skillshare • MIT App inventor • Podcast creation tools • Code.org • Canva Education • Scratch • Teachable Machine	**Problem-Based Learning** • PBL Works • CODAP • Allele • Minecraft Education
Reflection and Metacognition • Padlet • Seesaw • MirrorTalk • M2 app • Gemini Notebook • Google Slides • Google Sites • Penzu • Coggle • Miro	**Independent Practice** • Progress Learning • Khan Academy • IXL • Kahoot! • Wayground • Quizlet • Quill • CommonLit • Codecademy • Code.org	**Presentation and Communication** • Canva • Google Slides • Prezi • Beautiful.ai • Powtoon • Mentimeter • VoiceThread • Nearpod • Podcast creation tools

Appendix B: Pre-/Post-Conference Questions

Pre-Conference Questions

Instructional Coach and Teacher Planning Conversation

1. Learning Goal and Student Outcomes
    a. What standard, skill, or learning objective will students focus on during this session?
    b. What do you want students to know or be able to do by the end of the lesson?
    c. What evidence will show that students achieved the learning goal?

Instructional Coach Observation Notes

Strengths Observed:
Evidence of Student Engagement:
Technology Integration Level: ☐ Technology as Replacement ☐ Technology Supports Learning ☐ Technology Enhances Learning ☐ Technology Transforms Learning
Next Coaching Goal:

Post-Conference Questions

Instructional Coach and Teacher Reflection Conversation

1. Lesson Reflection
    a. What went well during the lesson?
    b. What evidence showed students were engaged?
    c. What challenges did students or teachers experience?

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