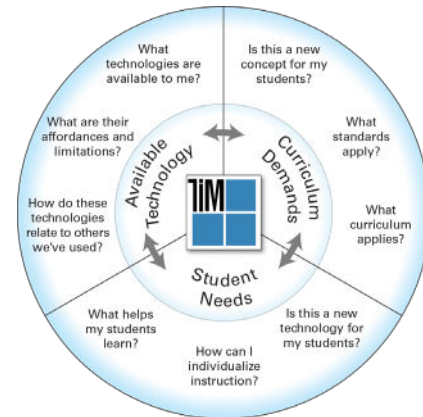# Technology Integration by Design

I was a computer teacher before there was a K-8 computer curriculum (1998-2000). We required the classroom teacher to attend computer class and learn alongside the students. Our goal was to foster **comfort with technology**, but also to **increase collaboration** and **cross-curricular lessons**. My mantra was "**Technology is a tool** - a means to an end- not a subject that should be taught in a vacuum." I worked closely with the classroom teachers to use content from their curriculum to teach tech tools. Eventually, the teachers started using technology in their classroom on their own. When I returned to teaching years later as a classroom teacher, I found using **technology changed my teaching style** all together. I moved from being the "sage on the stage" to the "**guide on the side**." Technology use fostered **engagement, creativity, and boundless learning**. I soon found that students EXCEEDED my expectations when I moved out of the way! The curriculum most teachers are expected to teach is impossible to complete if each standard is taught separately. Teachers need to create learning opportunities that allow students to learn across curricular boundaries. **Technology is key** in making that happen. Technology should not be viewed as "another thing I have to teach." Rather, technology needs to be presented to teachers as a **solution** to a daunting task. Then the teachers need to be supported and encouraged in their technology use.

But how do you choose when, where, and what type of technology to integrate into your curriculum? Using the **Technology Integration Matrix (TIM)** model, developed by the Florida Center for Instructional Technology, helps teachers to **intentionally** and **strategically** use technology in their classrooms. The TIM provides a framework for describing and targeting the use of technology to **enhance learning.** Using the TIM helps teachers shift their classroom from one that is teacher-centered to one that is **student-centered**. The TIM incorporates five interdependent characteristics of **meaningful learning** environments: active, collaborative, constructive, authentic, and goal-directed.

These characteristics are associated with five levels of **technology integration**: entry, adoption, adaptation, infusion, and transformation. The TIM Instructional Planning Model can be used to **choose the best educational technology** by considering three factors: **available technology**, **curriculum demands**, and **student needs**. Teachers are able to use these tools to plan **transformative lessons** and reflect on the effectiveness of those lessons. As a result, participants will be able to use technology more efficiently, purposefully, and to **enhance** and **propel student learning**.

S3 E-TIP
Educational Technology Integration Pointers

THE TECHNOLOGY INTEGRATION MATRIX

©Florida Center for Instructional Technology

Teachers can **work their way across the matrix** from Entry-level to Transformation-level and down the matrix from Active to Goal-Directed learning for **maximum efficiency** of technology integration in the classroom.

Learning Characteristics Explained:

Active – Students are actively **engaged** in using technology as a tool rather than passively receiving information from the technology.

Collaborative - Students use technology to **collaborate with others** rather than working individually at all times.

Constructive – Students use technology tools to **connect new information** to the prior knowledge rather than to passively receive information.

Authentic – Students use technology tools to **link learning activities to the world** beyond the instructional setting rather than working on decontextualized assignments.

Goal-Directed - Students use technology tools to **set goals, plan activities, monitor progress, and evaluate results** rather than simply completing assignments without reflection.

Technology Integration Levels Explained:

Entry - The **teacher begins to use technology** tools to deliver curriculum content to students.

Adoption – The **teacher directs students** in the conventional and procedural use of technology tools.

Adaption – The teacher facilitates **students** in **exploring** and **independently using technology tools**.

Infusion – The teacher provides the learning context and the **students choose** the technology tools.

Transformation – The teacher encourages the **innovative use of technology tools**. Technology tools are used to facilitate **higher-order learning activities** that may not have been possible without the use of technology.

TIM-O
Technology Integration Matrix Observation Tool

Document the pedagogical dimensions of classroom technology use.

The TIM-O is a flexible tool for classroom walkthroughs that can be used for formative feedback, peer coaching, grant evaluation, or professional development planning. This online tool guides principals, teachers, and others in identifying the level of technology integration for a particular lesson. Additional versions of the TIM-O are designed for lesson plan review and for teacher lesson reflection.

TIM-O is a great tool for tracking the usefulness, **effectiveness**, and **growth** of a class and teachers. It is highly effective to foster growth in the classroom by creating a technology integration plan into any given lesson plan. Before and after steps have been taken for technology to be integrated, a **TIM certified observer** can observe a class. During these observations, the level of technology integration in the Matrix can be utilized to **evaluate where there can be improvements** in the classroom or curriculum for **higher-order customizable learning**.

While the Technology Integration Matrix may be somewhat overwhelming or seem difficult to implement, it comes with

great ease with **customizable training** and **coaching** from S3's EdTech Team. **Our team is TIM certified** and we partner closely with our counterparts at FCIT. For training on how to implement the TIM, help to continuously teach using the latest technology methods, to purchase TIM Tools, and for any questions, contact **Tricia Dirker** at **tdirker@mys3tech.com**.

Sources:

"Benefits Of Technology Integration In Education Infographic - e-Learning Infographics." *e*, 9 Feb. 2018, https://elearninginfographics.com/benefits-technology-integration-education-infographic/.

Daly, Jimmy, and Jimmy. "A Map of Education Technology Through 2040 [#Infographic]." *Technology Solutions That Drive Education*, 26 Aug. 2013, https://edtechmagazine.com/higher/article/2013/08/map-education-technology-through-2040-infographic.

"Determining The Usefulness Of Classroom Technologies – Part 1." *The EvoLLLution*, 30 Dec. 2014, https://evolllution.com/opinions/determining-the-usefulness-of-classroom-technologies-part-1/.

Maclemale, Richard. "Matrix." TIM, http://fcit.usf.edu/matrix/matrix/.

Marcinek, Andrew. "Technology and Teaching: Finding a Balance." Edutopia, George Lucas Educational Foundation, 11 Mar. 2014, www.edutopia.org/blog/technology-and-teaching-finding-balance-andrew-marcinek.

Find more E-tips at https://goo.gl/qPn7bN.