











The Technology Integration Matrix

Table of Summary Descriptors

The Technology Integration Matrix (TIM) provides a framework for describing and targeting the use of technology to enhance learning. 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. Together, the five characteristics of meaningful learning environments and five levels of technology integration create a matrix of 25 cells, as illustrated below.

<div>→</div> <div>LEVELS OF TECHNOLOGY INTEGRATION</div>	<div></div> <div>ENTRY LEVEL</div> <div>The teacher begins to use technology tools to deliver curriculum content to students.</div>	<div></div> <div>ADOPTION LEVEL</div> <div>The teacher directs students in the conventional and procedural use of technology tools.</div>	<div></div> <div>ADAPTATION LEVEL</div> <div>The teacher facilitates the students' exploration and independent use of technology tools.</div>	<div></div> <div>INFUSION LEVEL</div> <div>The teacher provides the learning context and the students choose the technology tools.</div>	<div></div> <div>TRANSFORMATION LEVEL</div> <div>The teacher encourages the innovative use of technology tools to facilitate higher-order learning activities that may not be possible without the use of technology.</div>	
	<div>↓</div> <div>CHARACTERISTICS OF THE LEARNING ENVIRONMENT</div>					
	<div></div> <div>ACTIVE LEARNING</div> <div>Students are actively engaged in using technology as a tool rather than passively receiving information from the technology.</div>	<div>Active Entry</div> <div>Information passively received</div>	<div>Active Adoption</div> <div>Conventional, procedural use of tools</div>	<div>Active Adaptation</div> <div>Conventional independent use of tools; some student choice and exploration</div>	<div>Active Infusion</div> <div>Choice of tools and regular, self-directed use</div>	<div>Active Transformation</div> <div>Extensive and unconventional use of tools</div>
	<div></div> <div>COLLABORATIVE LEARNING</div> <div>Students use technology tools to collaborate with others rather than working individually at all times.</div>	<div>Collaborative Entry</div> <div>Individual student use of technology tools</div>	<div>Collaborative Adoption</div> <div>Collaborative use of tools in conventional ways</div>	<div>Collaborative Adaptation</div> <div>Collaborative use of tools; some student choice and exploration</div>	<div>Collaborative Infusion</div> <div>Choice of tools and regular use for collaboration</div>	<div>Collaborative Transformation</div> <div>Collaboration with peers, outside experts, and others in ways that may not be possible without technology</div>
	<div></div> <div>CONSTRUCTIVE LEARNING</div> <div>Students use technology tools to connect new information to their prior knowledge rather than to passively receive information.</div>	<div>Constructive Entry</div> <div>Information delivered to students</div>	<div>Constructive Adoption</div> <div>Guided, conventional use for building knowledge</div>	<div>Constructive Adaptation</div> <div>Independent use for building knowledge; some student choice and exploration</div>	<div>Constructive Infusion</div> <div>Choice and regular use for building knowledge</div>	<div>Constructive Transformation</div> <div>Extensive and unconventional use of technology tools to build knowledge</div>
	<div></div> <div>AUTHENTIC LEARNING</div> <div>Students use technology tools to link learning activities to the world beyond the instructional setting rather than working on decontextualized assignments.</div>	<div>Authentic Entry</div> <div>Technology use unrelated to the world outside of the instructional setting</div>	<div>Authentic Adoption</div> <div>Guided use in activities with some meaningful context</div>	<div>Authentic Adaptation</div> <div>Independent use in activities connected to students' lives; some student choice and exploration</div>	<div>Authentic Infusion</div> <div>Choice of tools and regular use in meaningful activities</div>	<div>Authentic Transformation</div> <div>Innovative use for higher-order learning activities connected to the world beyond the instructional setting</div>
<div></div> <div>GOAL-DIRECTED LEARNING</div> <div>Students use technology tools to set goals, plan activities, monitor progress, and evaluate results rather than simply completing assignments without reflection.</div>	<div>Goal-Directed Entry</div> <div>Directions given; step-by-step task monitoring</div>	<div>Goal-Directed Adoption</div> <div>Conventional and procedural use of tools to plan or monitor</div>	<div>Goal-Directed Adaptation</div> <div>Purposeful use of tools to plan and monitor; some student choice and exploration</div>	<div>Goal-Directed Infusion</div> <div>Flexible and seamless use of tools to plan and monitor</div>	<div>Goal-Directed Transformation</div> <div>Extensive and higher-order use of tools to plan and monitor</div>	