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The Technology Integration Matrix

- A common language for technology integration and professional development
- 5 Attributes of Learning Environments (Active, Collaborative, Constructive, Authentic, and Goal-Directed)
- 5 Levels of Technology Integration (Entry, Adoption, Adaptation, Infusion, Transformation)



Five Characteristics of Meaningful Learning Environments



Active Learning



Goal-Directed Learning



Collaborative Learning

Authentic Learning

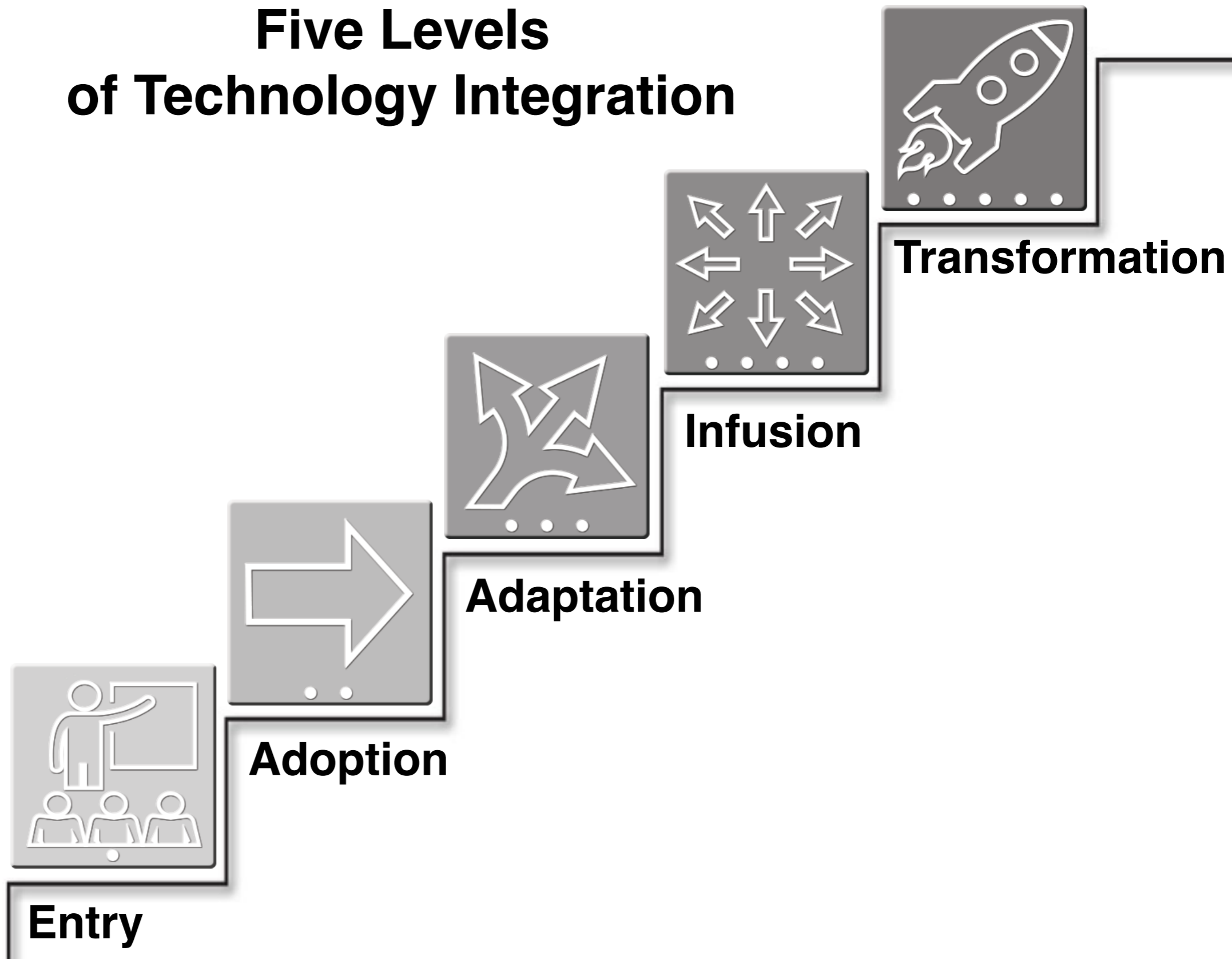
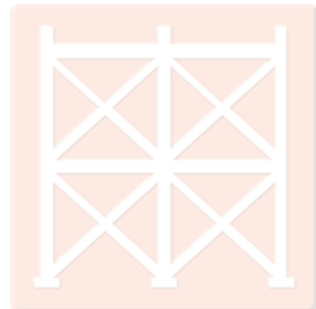


Constructive Learning




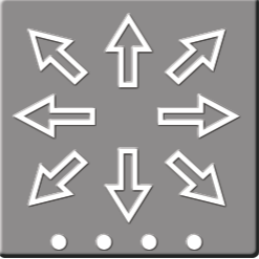










Five Levels of Technology Integration





					
	Active Entry Information passively received	Active Adoption Conventional, procedural use of tools	Active Adaptation Conventional independent use of tools; some student choice and exploration	Active Infusion Choice of tools and regular, self-directed use	Active Transformation Extensive and unconventional use of tools
	Collaborative Entry Individual student use of technology tools	Collaborative Adoption Collaborative use of tools in conventional ways	Collaborative Adaptation Collaborative use of tools; some student choice and exploration	Collaborative Infusion Choice of tools and regular use for collaboration	Collaborative Transformation Collaboration with peers, outside experts, and others in ways that may not be possible without technology
	Constructive Entry Information delivered to students	Constructive Adoption Guided, conventional use for building knowledge	Constructive Adaptation Independent use for building knowledge; some student choice and exploration	Constructive Infusion Choice and regular use for building knowledge	Constructive Transformation Extensive and unconventional use of technology tools to build knowledge
	Authentic Entry Technology use unrelated to the world outside of the instructional setting	Authentic Adoption Guided use in activities with some meaningful context	Authentic Adaptation Independent use in activities connected to students' lives; some student choice and exploration	Authentic Infusion Choice of tools and regular use in meaningful activities	Authentic Transformation Innovative use for higher-order learning activities connected to the world beyond the instructional setting
	Goal-Directed Entry Directions given; step-by-step task monitoring	Goal-Directed Adoption Conventional and procedural use of tools to plan or monitor	Goal-Directed Adaptation Purposeful use of tools to plan and monitor; some student choice and exploration	Goal-Directed Infusion Flexible and seamless use of tools to plan and monitor	Goal-Directed Transformation Extensive and higher-order use of tools to plan and monitor



Five Characteristics of the Learning Environment

Each row of the Technology Integration Matrix represents one of the five characteristics:

- Active Learning
- Collaborative Learning
- Constructive Learning
- Authentic Learning
- Goal-Directed Learning.















Learning Environment Characteristics

ACTIVE

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

The Active characteristic makes the distinction between lessons in which students passively receive information and lessons in which students discover, process, and apply their learning. Student engagement is a key component of active learning.



Learning Environment Characteristics

COLLABORATIVE

Students use technology tools to collaborate with others rather than working individually at all times.

The Collaborative characteristic describes the degree to which technology is used to facilitate, enable, or enhance students' opportunities to work with peers and outside experts. This characteristic considers the use of conventional collaborative technology tools as well as other kinds of technology tools that assist students working with others.



Learning Environment Characteristics

CONSTRUCTIVE

Students use technology tools to connect new information to their prior knowledge rather than to passively receive information.

The Constructive characteristic describes learner-centered instruction that allows students to use technology tools to connect new information to their prior knowledge. This characteristic is concerned with the flexible use of technology to build knowledge in the modality that is most effective for each student.



Learning Environment Characteristics

AUTHENTIC

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

The Authentic characteristic involves using technology to link learning activities to the world beyond the instructional setting. This characteristic focuses on the extent to which technology is used to place learning into a meaningful context, increase its relevance to the learner, and tap into students' intrinsic motivation.



Learning Environment Characteristics

GOAL-DIRECTED

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

The Goal-Directed characteristic describes the ways in which technology is used to set goals, plan activities, monitor progress, and evaluate results. This characteristic focuses on the extent to which technology facilitates, enables, or supports meaningful reflection and metacognition.













Five Levels of Technology Integration

Each column of the Technology Integration Matrix represents one of the five levels:

- Entry Level
- Adoption Level
- Adaptation Level
- Infusion Level
- Transformation Level















Levels of Technology Integration

ENTRY

The teacher begins to use technology tools to deliver curriculum content to students

At the Entry level, typically the teacher uses technology to deliver curriculum content to students. Entry level activities may include listening to or watching content delivered through technology or working on activities designed to build fluency with basic facts or skills, such as drill-and-practice exercises. In a lesson that includes technology use at the Entry level, the students may not have direct access to the technology. Decisions about how and when to use technology tools, as well as which tools, to use are made by the teacher.



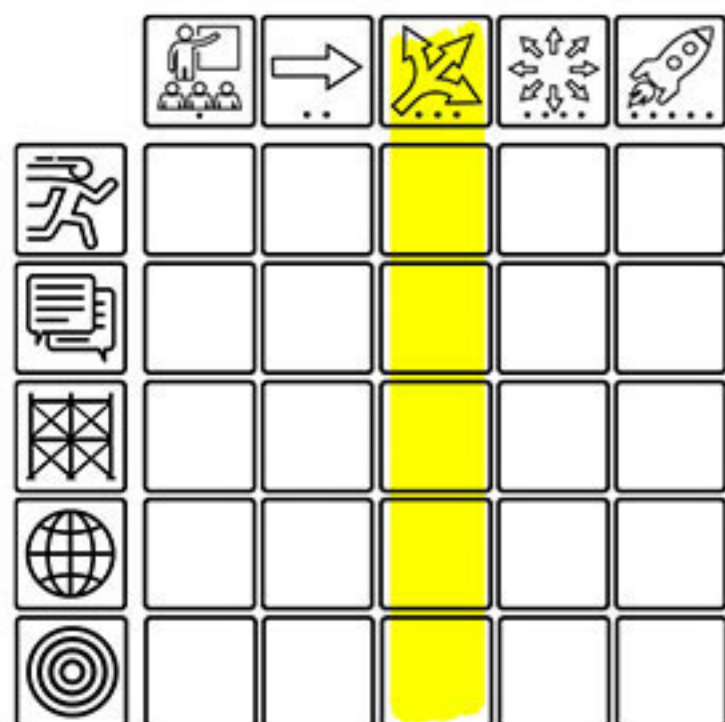
					
					
					
					
					
					

Levels of Technology Integration

ADOPTION

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

At the Adoption level, technology tools are used in conventional ways. The teacher makes decisions about which technology tool to use and when and how to use it. Students' exposure to individual technology tools may be limited to single types of tasks that involve a procedural understanding.

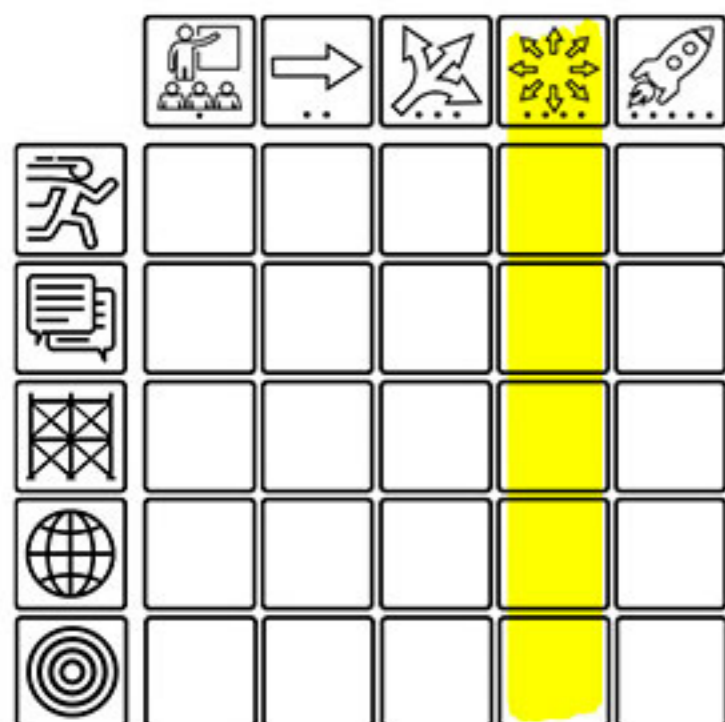


Levels of Technology Integration

ADAPTATION

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

At the Adaptation level, the teacher incorporates technology tools as an integral part of the lesson. While the teacher makes most decisions about technology use, the teacher guides the students in the independent use of technology tools. Students have a greater familiarity with the use of technology tools and have a more conceptual understanding of the tools than students at the Adoption level. They are able to work without direct procedural instruction from the teacher and begin to explore different ways of using the technology tools.

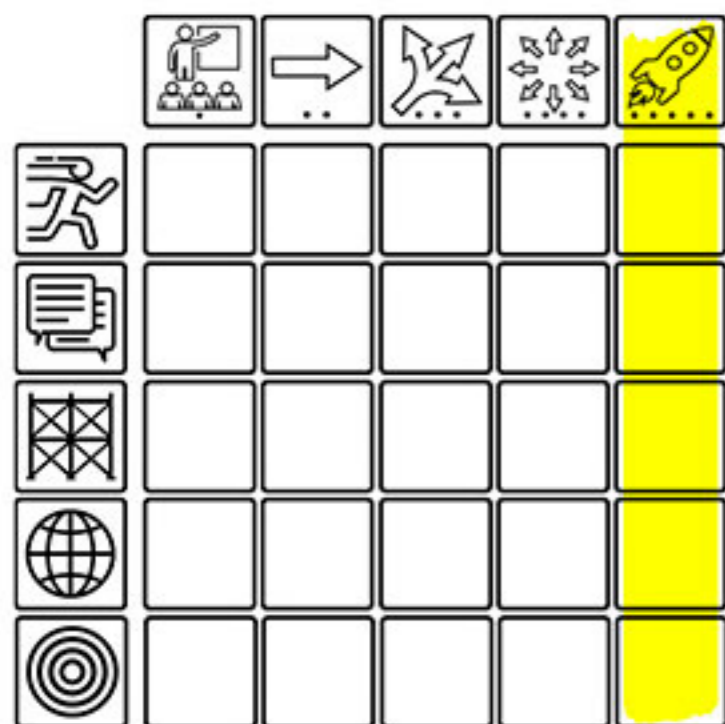


Levels of Technology Integration

INFUSION

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

At the Infusion level, a range of different technology tools are integrated flexibly and seamlessly into teaching and learning. Technology tools are available to meet the needs of all students. Students are able to make informed decisions about when and how to use different tools. The instructional focus is on student learning and not on the technology tools themselves. For this reason, Infusion level work typically occurs after teachers and students have experience with a particular technology tool. The teacher guides students to make decisions about when and how to use technology.



Levels of Technology Integration

TRANSFORMATION

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.

At the Transformation level, students use technology tools flexibly to achieve specific learning outcomes. The students have a conceptual understanding of the tools coupled with extensive practical knowledge about their use. Students apply that understanding and knowledge, and students may extend the use of technology tools. They are encouraged to use technology tools in unconventional ways and are self-directed in combining the use of various tools. The teacher serves as a guide, mentor, and model in the use of technology. At this level, technology tools are often used to facilitate higher-order learning activities that may not be possible, or would be difficult to accomplish without the use of technology.



Levels of Technology Integration



 ENTRY LEVEL The teacher begins to use technology tools to deliver curriculum content to students.	 ADOPTION LEVEL The teacher directs students in the conventional and procedural use of technology tools.	 ADAPTATION LEVEL The teacher facilitates the students' exploration and independent use of technology tools.	 INFUSION LEVEL The teacher provides the learning context and the students choose the technology tools.	 TRANSFORMATION LEVEL 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.
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Characteristics of the Learning Environment



 ACTIVE LEARNING Students are actively engaged in using technology as a tool rather than passively receiving information from the technology.	Active Entry Information passively received	Active Adoption Conventional, procedural use of tools	Active Adaptation Conventional independent use of tools; some student choice and exploration	Active Infusion Choice of tools and regular, self-directed use	Active Transformation Extensive and unconventional use of tools
 COLLABORATIVE LEARNING Students use technology tools to collaborate with others rather than working individually at all times.	Collaborative Entry Individual student use of technology tools	Collaborative Adoption Collaborative use of tools in conventional ways	Collaborative Adaptation Collaborative use of tools; some student choice and exploration	Collaborative Infusion Choice of tools and regular use for collaboration	Collaborative Transformation Collaboration with peers, outside experts, and others in ways that may not be possible without technology
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 GOAL-DIRECTED LEARNING Students use technology tools to set goals, plan activities, monitor progress, and evaluate results rather than simply completing assignments without reflection.	Goal-Directed Entry Directions given; step-by-step task monitoring	Goal-Directed Adoption Conventional and procedural use of tools to plan or monitor	Goal-Directed Adaptation Purposeful use of tools to plan and monitor; some student choice and exploration	Goal-Directed Infusion Flexible and seamless use of tools to plan and monitor	Goal-Directed Transformation Extensive and higher-order use of tools to plan and monitor



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