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# The Technology Integration Matrix: Introducing the Five Characteristics

# THE TECHNOLOGY INTEGRATION MATRIX

## Levels of Technology Integration

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

## Characteristics of the Learning Environment

| | ENTRY | ADOPTION | ADAPTATION | INFUSION | TRANSFORMATION |
|---|---|---|---|---|---|
| **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 |
| **CONSTRUCTIVE LEARNING** — Students use technology tools to connect new information to their prior knowledge rather than to passively receive information. | **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 LEARNING** — Students use technology tools to link learning activities to the world beyond the instructional setting rather than working on decontextualized assignments. | **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 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 |

# 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.

# Characteristics of a Meaningful Learning Environment

**Active**

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

**TRANSFORMATION LEVEL:**
Extensive and unconventional use of tools

**INFUSION LEVEL:**
Choice of tools and regular, self-directed use

**ADAPTATION LEVEL:**
Conventional independent use of tools; some student choice and exploration

**ADOPTION LEVEL:**
Conventional, procedural use of tools

**ENTRY LEVEL:**
Information passively received

# Characteristics of a Meaningful Learning Environment

## Collaborative

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

**TRANSFORMATION LEVEL:**
Collaboration with peers, outside experts, and others in ways that may not be possible without technology

**INFUSION LEVEL:**
Choice of tools and regular use for collaboration

**ADAPTATION LEVEL:**
Collaborative use of tools; some student choice and exploration

**ADOPTION LEVEL:**
Collaborative use of tools in conventional ways

**ENTRY LEVEL:**
Individual student use of tools

## Characteristics of a Meaningful Learning Environment

**Constructive**

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

**TRANSFORMATION LEVEL:**
Extensive and unconventional use of technology tools to build knowledge

**INFUSION LEVEL:**
Choice and regular use for building knowledge

**ADAPTATION LEVEL:**
Independent use for building knowledge; some student choice and exploration

**ADOPTION LEVEL:**
Guided, conventional use for building knowledge

**ENTRY LEVEL:**
Information delivered to students

# Characteristics of a Meaningful Learning Environment

**Authentic**

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

**TRANSFORMATION LEVEL:**
Innovative use for higher-order learning activities connected to the world beyond the instructional setting

**INFUSION LEVEL:**
Choice of tools and regular use in meaningful activities

**ADAPTATION LEVEL:**
Independent use in activities connected to students' lives; some student choice and exploration

**ADOPTION LEVEL:**
Guided use in activities with some meaningful context

**ENTRY LEVEL:**
Technology use unrelated to the world outside of the instructional setting

# Characteristics of a Meaningful Learning Environment

## ◎ *Goal-Directed*

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

**TRANSFORMATION LEVEL:**
Extensive and higher-order use of tools to plan and monitor

**INFUSION LEVEL:**
Flexible and seamless use of tools to plan and monitor

**ADAPTATION LEVEL:**
Purposeful use of tools to plan and monitor; some student choice and exploration

**ADOPTION LEVEL:**
Conventional and procedural use of tools to plan or monitor

**ENTRY LEVEL:**
Directions given, step-by-step task monitoring

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