Proposed Revisions to the Technology Integration Matrix

January 2019

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This document has not yet been adopted.

https:fcit.usf.edu/matrix/2019revision

INTRODUCTION

This document is a draft revision of some of the text included in the Technology Integration Matrix (TIM). The TIM was created in 2003-2006 as a response to the need for a common definition of technology integration. Unlike many other models, the TIM places the focus squarely on pedagogy, not technology. In 2011, FCIT revised the TIM to include specific descriptors of student and teacher activity as well as descriptors of instructional settings.

Although technology has changed immensely in the years since the creation of the TIM, we have found that the underlying principles of the TIM — student agency, a focus on pedagogy, and higher-order thinking — have remained relevant to teachers and students.

We undertook this revision specifically because of changes in instructional settings. As more instruction occurs in online environments, we wanted to ensure that the TIM instructional setting indicators still applied. In large part, we found that they do. However, we took the opportunity to go beyond the instructional settings and review all indicators across the matrix. None of the underlying pedagogical principles has changed in the proposed revision. Our purpose has been to clarify descriptors that users have had questions about, to create direct statements that are more easily translated into other languages, to ensure consistency across the descriptors, and to remove any vestiges of verbiage that restricted descriptors to a face-to-face environment. We believe that the revised instructional setting descriptors apply equally well in face-to-face, virtual, and blended environments. The revisions increase clarity, depth, and consistency.

We believe that the TIM is even more important today than when it was first created. Technology is ubiquitous in our world. Students are best prepared for that world when they participate in engaging activities that involve making authentic decisions about how to apply a variety of technology tools to solve problems. The TIM maps the landscape of effective technology integration.

This document provides the complete proposed, revised TIM indicators along with the current TIM indicators for your reference. After incorporating feedback from a broad range of stakeholders, we plan to publish the revised TIM in 2019. We welcome your feedback.

SUMMARY DESCRIPTORS: Draft of proposed revisions to the Technology Integration Matrix Summary Descriptors. If there is any revision to a specific descriptor, the original 2011 version appears below it in grey italic type. For more information about the revision process please visit: https:fcit.usf.edu/matrix/2019revision

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
ACTIVE	Information passively received	Conventional, procedural use of technology tools	Conventional independent use of tools; some student choice and exploration	Choice of tools and regular, self-directed use	Extensive and unconventional use of tools
COLLABORATIVE	Individual student use of technology tools *(PREVIOUSLY: Individual student use of tools)*	Collaborative use of tools in conventional ways	Collaborative use of tools; some student choice and exploration	Choice of tools and regular use for collaboration	Collaboration with peers, outside experts, and others in ways that may not be possible without technology *(PREVIOUSLY: Collaboration with peers and outside resources in ways not possible without technology)*
CONSTRUCTIVE	Information delivered to students	Guided, conventional use for building knowledge	Independent use for building knowledge; some student choice and exploration	Choice and regular use for building knowledge	Extensive and unconventional use of technology tools to build knowledge
AUTHENTIC	Technology use unrelated to the world outside of the instructional setting *(PREVIOUSLY: Use unrelated to the world outside of the instructional setting)*	*Guided use in activities with some meaningful context*	*Independent use in activities connected to students' lives; some student choice and exploration*	*Choice of tools and regular use in meaningful activities*	Innovative use for higher-order learning activities connected to the world beyond the instructional setting *(PREVIOUSLY: Innovative use for higher order learning activities in a local or global context)*
GOAL-DIRECTED	Directions given, step-by-step task monitoring	Conventional and procedural use of tools to plan or monitor	Purposeful use of tools to plan and monitor; some student choice and exploration	Flexible and seamless use of technology tools to plan and monitor	Extensive and higher-order use to tools to plan and monitor

STUDENT DESCRIPTORS: Draft of proposed revisions to the Technology Integration Matrix Student Descriptors. If there is any revision to a specific descriptor, the original 2011 version appears below it in grey italic type. For more information about the revision process please visit: https:fcit.usf.edu/matrix/2019revision

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
ACTIVE	Students receive information from the teacher or from other sources. Students may be watching an instructional video on a website or using a computer program for "drill and practice" activities.	Students use technology in conventional ways and are closely directed by the teacher. *(PREVIOUSLY: Students are using technology in conventional ways and the locus of control is on the teacher.)*	Students work independently with technology tools in conventional ways. Students are developing a conceptual understanding of technology tools and begin to engage with these tools.	Students understand how to use many types of technology tools, are able to select tools for specific purposes, and use them regularly.	Students have options on how and why to use different technology tools for higher-order thinking tasks. They often use tools in unconventional ways and the technology itself becomes an invisible part of the learning. *(PREVIOUSLY: Students have options on how and why to use different technology tools, and often extend the use of tools in unconventional ways. Students are focused on what they are able to do with the technology. The technology tools become an invisible part of the learning.)*
COLLABORATIVE	Students primarily work alone when using technology. Students may collaborate without using technology tools.	Students have opportunities to use collaborative tools, such as email, in conventional ways. These opportunities for collaboration with others through technology or in using technology are limited, and are not a regular part of their learning.	Students independently use technology tools in conventional ways for collaboration. Students are developing a conceptual understanding of the use of technology tools for working with others.	Technology use for collaboration by students is regular and normal in this setting. Students choose the best tools to use to accomplish their work.	Students regularly use technology tools to collaborate with peers, experts, and others who may be in different locations and may represent different experiences, cultures, and points of view. *(PREVIOUSLY: Students regularly use technology tools for collaboration, to work with peers and experts irrespective of time zone or physical distances.)*

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
CONSTRUCTIVE	Students receive information from the teacher via technology.	Students begin to utilize technology tools to build on prior knowledge and construct meaning. *(PREVIOUSLY: Students begin to utilize technology tools (such as graphic organizers) to build on prior knowledge and construct meaning.)*	Students begin to use technology tools independently to facilitate construction of meaning. With their growing conceptual understanding of the technology tools, students can explore the use of these tools as they are building knowledge.	Students consistently have opportunities to select technology tools and use them in the way that best facilitates their construction of understanding.	Students use technology to construct and share knowledge in ways that may not be possible without technology. Their deep understanding of the technology tools allows them to extend the use of the tools in creative ways to construct meaning. *(PREVIOUSLY: Students use technology to construct and share knowledge in ways that may have been impossible without technology. They have a deep understanding of the technology tools that allows them to explore and extend the use of the tools to construct meaning.)*
AUTHENTIC	Students use technology to complete assigned activities that are generally unrelated to the world beyond the instructional setting.	Students have opportunities to apply technology tools to some content-specific activities that are related to the students or issues beyond the instructional setting.	Students begin to use technology tools on their own in activities that have meaning beyond the instructional setting.	Students select appropriate technology tools to complete activities that have a meaningful context beyond the instructional setting. Students regularly use technology tools, and are comfortable in choosing and using the tools in the most meaningful way for each activity.	Students explore and extend the use of technology tools to participate in higher-order learning activities that have meaning in the world beyond the instructional setting. Students regularly engage in activities that may not be possible without the use of technology. *(PREVIOUSLY: Students explore and extend the use of technology tools to participate in projects and higher order learning activities that have meaning outside of school. Students regularly engage in these types of activities that may have been impossible to achieve without technology.)*

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
GOAL-DIRECTED	Students may receive directions, guidance, and/or feedback via technology. *(PREVIOUSLY: Students receive directions, guidance, and/or feedback via technology. For example, students may work through levels of an application that provides progressively more difficult practice activities.)*	Students follow procedural instructions to use technology in conventional ways to set goals, plan, monitor, evaluate, or reflect upon an activity. *(PREVIOUSLY: Students follow procedural instructions to use technology to either plan, monitor, or evaluate an activity. For example, students may begin a K-W-L chart using concept mapping application.)*	Students independently use technology to set goals, plan, monitor, evaluate, and reflect upon specific activities. Students explore the use of the technology tools for these purposes. *(PREVIOUSLY: Students have opportunities to independently use technology tools to facilitate goal-setting, planning, monitoring, and evaluating specific activities. Students explore the use of the technology tools for these purposes.)*	Students regularly use technology independently to set goals, plan activities, monitor progress, evaluate results, and reflect upon learning activities. The students may choose from a variety of technologies when working on self-directed goals. *(PREVIOUSLY: Students regularly use technology tools to set goals, plan activities, monitor progress, and evaluate results. The students know how to use, and have access to, a variety of technologies from which they choose. For example, students may choose to write a blog for peer mentoring toward self-selected writing goals.)*	Students engage in ongoing metacognitive activities and work on self-directed goals at a level only possible with the support of technology. Students are empowered to extend the use of technology tools and have greater ownership and responsibility for learning. *(PREVIOUSLY: Students engage in ongoing metacognitive activities at a level that may have been unattainable without the support of technology tools. Students are empowered to extend the use of technology tools and have greater ownership and responsibility for learning.)*

TEACHER DESCRIPTORS: Draft of proposed revisions to the Technology Integration Matrix Teacher Descriptors. If there is any revision to a specific descriptor, the original 2011 version appears below it in grey italic type. For more information about the revision process please visit: https:fcit.usf.edu/matrix/2019revision

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
ACTIVE	The teacher may be the only one actively using technology. This may include using presentation software to support delivery of a lecture. The teacher may also have the students complete "drill and practice" activities on computers to practice basic skills, such as typing	The teacher controls the type of technology and how it is used. The teacher may be pacing the students through a project, making sure that they each complete each step in the same sequence with the same tool. Although the students are more active than students at the Entry level in their use of technology, the teacher still strongly regulates activities.	The teacher allows for some student choice and exploration of technology tools. Because the students are developing a conceptual and procedural knowledge of the technology tools, the teacher does not need to guide students step-by-step through activities. Instead, the teacher acts as a facilitator toward learning, allowing for greater student engagement with technology tools. *(PREVIOUSLY: The teacher chooses which technology tools to use and when to use them. Because the students are developing a conceptual and procedural knowledge of the technology tools, the teacher does not need to guide students step by step through activities. Instead, the teacher acts as a facilitator toward learning, allowing for greater student engagement with technology tools.)*	The teacher guides, informs, and contextualizes student choices of technology tools and is flexible and open to student ideas. Lessons are structured so that student use of technology is self-directed.	The teacher serves as a guide, mentor, and model in the use of technology. The teacher encourages and supports the active engagement of students with technology resources. The teacher facilitates lessons in which students are engaged in higher-order learning activities that may not have been possible without the use of technology tools. The teacher helps students locate appropriate resources to support student choices.
COLLABORATIVE	The teacher directs students to work alone on tasks involving technology.	The teacher directs students in the conventional use of technology tools for working with others.	The teacher provides opportunities for students to use technology to work with others. The teacher selects and provides technology tools for students to use in collaborative ways, and encourages students to begin exploring the use of these tools.	The teacher fosters a collaborative learning environment and supports students' meaningful choices in their selection of technology tools for collaboration. *(PREVIOUSLY: Teacher encourages students to use technology tools collaboratively.)*	The teacher seeks partnerships outside of the setting to allow students to access experts and peers in other locations, and encourages students to extend the use of collaborative technology tools in higher-order learning activities that may not be possible without the use of technology tools. *(PREVIOUSLY: The teacher seeks partnerships outside of the setting to allow students to access experts and peers in other locations, and encourages students to extend the use of collaborative technology tools in higher order learning activities that may not have been possible without the use of technology tools.)*

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
CONSTRUCTIVE	The teacher uses technology to deliver information to students.	The teacher provides some opportunities for students to use technology in conventional ways to build knowledge and experience. The students construct meaning about the relationships between prior knowledge and new learning, but the teacher makes the choices regarding technology use. *(PREVIOUSLY: The teacher provides some opportunities for students to use technology in conventional ways to build knowledge and experience. The students are constructing meaning about the relationships between prior knowledge and new learning, but the teacher is making the choices regarding technology use.)*	The teacher creates instruction in which students' use of technology tools is integral to building an understanding of a concept. The teacher gives the students access to technology tools and guides them in exploring and choosing appropriate resources. *(PREVIOUSLY: The teacher has designed a lesson in which students' use of technology tools is integral to building an understanding of a concept. The teacher gives the students access to technology tools and guides them to appropriate resources.)*	The teacher consistently allows students to select technology tools to use in building an understanding of a concept. The teacher provides a context in which technology tools are seamlessly integrated into a lesson, and is supportive of student autonomy in choosing the tools and when they can best be used to accomplish the desired outcomes.	The teacher facilitates higher-order learning opportunities in which students regularly engage in activities that may be impossible to achieve without the use of technology tools. The teacher encourages students to explore the use of technology in unconventional ways and to use the full capacity of multiple tools in order to build knowledge. *(PREVIOUSLY: The teacher facilitates higher order learning opportunities in which students regularly engage in activities that may have been impossible to achieve without the use of technology tools. The teacher encourages students to explore the use of technology tools in unconventional ways and to use the full capacity of multiple tools in order to build knowledge.)*
AUTHENTIC	The teacher assigns work based on a predetermined curriculum unrelated to the students or issues beyond the instructional setting.	The teacher directs students in the conventional use of technology tools for learning activities that are sometimes related to the students or to issues beyond the instructional setting. *(PREVIOUSLY: The teacher directs students in the conventional use of technology tools for learning activities that are sometimes related to the students or issues beyond the instructional setting.)*	The teacher creates instruction that purposefully integrates technology tools and provides access to information on community and world issues. The teacher directs the choice of technology tools but students use the tools on their own, and may begin to explore other capabilities of the tools.	The teacher encourages students to use technology tools to make connections to the world outside of the instructional setting and to their lives and interests. The teacher provides a learning context in which students regularly use technology tools and have the freedom to choose the tools that, for each student, best match the task.	The teacher encourages innovative use of technology tools in higher-order learning activities that support connections to the lives of the students and the world beyond the instructional setting.

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
GOAL-DIRECTED	The teacher gives students directions and monitors step-by-step completion of tasks. The teacher sets goals for students and monitors their progress. *(PREVIOUSLY: The teacher uses technology to give students directions and monitor step-by-step completion of tasks. The teacher monitors the students' progress and sets goals for each student.)*	The teacher directs students step by step in the conventional use of technology tools to set goals, plan, monitor, evaluate an activity, or reflect upon learning activities. *(PREVIOUSLY: The teacher directs students step by step in the conventional use of technology tools to either plan, monitor, or evaluate an activity. For example, the teacher may lead the class step by step through the creation of a KWL chart using concept mapping software.)*	The teacher selects the technology tools and clearly integrates them into the lesson. The teacher facilitates students' independent use of the technology tools to set goals, plan, monitor progress, evaluate outcomes, and reflect upon learning activities. The teacher may provide guidance in breaking down tasks. *(PREVIOUSLY: The teacher selects the technology tools and clearly integrates them into the lesson. The teacher facilitates students independent use of the technology tools to set goals, plan, monitor progress, and evaluate outcomes. For example, in a given project, the teacher may select a spreadsheet program that students use independently to plan and monitor progress. The teacher may provide guidance in breaking down tasks.)*	The teacher creates a learning context in which students regularly use technology tools to set goals, plan, monitor, evaluate outcomes, and reflect upon learning activities. The teacher facilitates students choice and independent use of technology tools to accomplish these tasks. *(PREVIOUSLY: The teacher creates a learning context in which students regularly use technology tools for planning, monitoring, and evaluating learning activities. The teacher facilitates students' selection of technology tools.)*	The teacher creates a rich learning environment in which students regularly engage in higher-order planning, monitoring, evaluative, and reflective activities that may be impossible to achieve without technology. The teacher sets a context in which students are encouraged to use technology tools in innovative ways to direct and reflect on their own learning. *(PREVIOUSLY: The teacher creates a rich learning environment in which students regularly engage in higher order planning activities that may have been impossible to achieve without technology. The teacher sets a context in which students are encouraged to use technology tools in unconventional ways that best enable them to monitor their own learning.)*

INSTRUCTIONAL SETTING DESCRIPTORS: Draft of proposed revisions to the Technology Integration Instructional Matrix Setting Descriptors. If there is any revision to a specific descriptor, the original 2011 version appears below it in grey italic type. For more information about the revision process please visit: https:fcit.usf.edu/matrix/2019revision

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
ACTIVE	The setting is arranged for direct instruction and individual work. Any student access to technology resources is limited and highly regulated. *(PREVIOUSLY: The setting is arranged for direct instruction and individual seat work. The students may have very limited and regulated access to the technology resources.)*	The setting is arranged for direct instruction and individual work. The students have limited and regulated access to the technology resources. *(PREVIOUSLY: The setting is arranged for direct instruction and individual seat work. The students may have very limited and regulated access to the technology resources.)*	Technology tools are available on a regular basis.	Multiple technology tools are available to meet the needs of all students. *(PREVIOUSLY: Multiple technology tools are available in quantities sufficient to meet the needs of all students.)*	The arrangement of the setting is flexible and varied, allowing different kinds of self-directed learning activities supported by various technologies, including robust access to online resources for all students simultaneously.
COLLABORATIVE	The setting is arranged for direct instruction and individual work. *(PREVIOUSLY: The setting is arranged for direct instruction and individual seat work.)*	The setting allows for the possibility of group work, and at least some collaborative technology tools are available.	The setting allows multiple students to access technology tools simultaneously. *(PREVIOUSLY: Desks and workstations are arranged so that multiple students can access technology tools simultaneously.)*	Technology tools that allow for collaboration are always available to meet the needs of all students. *(PREVIOUSLY: Technology tools that allow for collaboration are permanently located in the setting and are available in sufficient quantities to meet the needs of all students.)*	Technology tools in this setting connect to text, voice, and video applications and network access has sufficient bandwidth to support the use of these technologies for all students simultaneously. *(PREVIOUSLY: Technology tools in this setting connect to text, voice, and video chat applications and network access has sufficient bandwidth to support the use of these technologies for all students simultaneously.)*
CONSTRUCTIVE	The setting allows the teacher to present content to all students. *(PREVIOUSLY: The setting is arranged so that all students can view the teacher's presentation.)*	Basic technology tools that allow for building knowledge are available on a limited basis to students for conventional uses. *(PREVIOUSLY: Technology tools that allow for building knowledge are available to students for conventional uses on a limited basis.)*	Technology tools that facilitate the construction of meaning are available to students for conventional uses. *(PREVIOUSLY: Technology tools that facilitate the construction of meaning are available to students for conventional uses.)*	The setting includes a variety of technology tools and access to rich online resources to meet the needs of all students. *(PREVIOUSLY: The setting includes a variety of technology tools and access to rich online resources that are available in sufficient quantities to meet the needs of all students.)*	The setting includes robust access to a wide variety of technology tools, robust access to online resources and communities, and the ability to publish new content online.

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
AUTHENTIC	Available resources, chosen by the teacher, are predominately textbook or textbook-like sources, whether digital or print. They are generally used without making connections to a real-world context or to the students' personal lives. *(PREVIOUSLY: Resources available via technology in the instructional setting include primarily textbook supplementary material and reference books or websites, such as encyclopedias.)*	Available resources, chosen by the teacher, may be predominately textbook or textbook-like sources, whether digital or print, and students may have guided access to primary source materials and selected information, data, and source materials beyond the instructional setting. *(PREVIOUSLY: The setting includes access to information about community and world events and primary source materials.)*	The setting allows for guided student access to a limited range of information, data, and source materials beyond the instructional setting. *(PREVIOUSLY: The setting includes access to information outside of school and primary source materials.)*	The setting provides a variety of technology tools and ongoing, independent access to a broad range of information, data, and source materials beyond the instructional setting. This access facilitates student pursuit of individual interests and emerging topics. *(PREVIOUSLY: The setting provides a variety of technology tools and access to rich online resources, including information outside of the school and primary source materials, that are available in sufficient quantities to meet the needs of all students.)*	The setting provides ongoing, independent access to a broad range of information, data, and source materials beyond the instructional setting. Robust, simultaneous access to a variety of technology tools allows all students to engage directly with others who may be in different locations and may represent different experiences, cultures, and points of view. *(PREVIOUSLY: The setting includes technology tools and online resources that allow for student engagement with the local or global communities. A variety of technology tools are available with robust access for all students simultaneously to information outside of the school and primary source materials.)*
GOAL-DIRECTED	The setting may include technology tools that allow students to demonstrate skill development and allow tracking of student progress across levels. *(PREVIOUSLY: The setting includes access to skill building websites and applications, including the ability to track student progress across levels.)*	The setting includes access to some teacher-selected technology tools that allow students to set goals, plan, monitor, evaluate, or reflect upon their work. *(PREVIOUSLY: The setting includes access to technology tools that allow students to plan, monitor, and evaluate their work.)*	The setting includes access to a variety of technology tools, allowing students some choice in how they set goals, plan, monitor, evaluate, and reflect upon their work. *(PREVIOUSLY: The setting includes access to technology tools (such as graphic organizers, calendars, spreadsheet software, and timeline software) for planning, monitoring progress, and evaluating outcomes.)*	The setting includes a rich variety of technology tools to allow students many choices in how they set goals, plan, monitor, evaluate, and reflect upon their work. *(PREVIOUSLY: The setting includes access to a variety of technology tools for planning in sufficient quantities to meet the needs of all students.)*	The setting includes robust access to a rich variety of technology tools and online resources to allow students many choices in how they independently set goals, plan, monitor, evaluate, and reflect upon their work. *(PREVIOUSLY: The setting includes access to a wide variety of technology tools and robust access to online resources for all students simultaneously.)*

INTEGRATION LEVEL HEADERS: Draft of proposed revisions to the Technology Integration Matrix level headers. If there is any revision to a specific descriptor, the original 2011 version appears below it in grey italic type. For more information about the revision process please visit: https:fcit.usf.edu/matrix/2019revision

	ENTRY LEVEL	ADOPTION LEVEL	ADAPTATION LEVEL	INFUSION LEVEL	TRANSFORMATION LEVEL
SHORT DESCRIPTOR	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. *(PREVIOUSLY: The teacher facilitates students in exploring and independently using technology tools.)*	The teacher provides the learning context and the students choose the technology tools. *(PREVIOUSLY: The teacher provides the learning context and the students choose the technology tools to achieve the outcome.)*	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. *(PREVIOUSLY: 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.)*
EXTENDED DESCRIPTOR	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.	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.	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.	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. *(PREVIOUSLY: At the Infusion level, a range of different technology tools are integrated flexibly and seamlessly into teaching and learning. Technology is available in sufficient quantities 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.)*	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. *(PREVIOUSLY: 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 would not otherwise have been possible, or would have been difficult to accomplish without the use of technology.)*

NOTE: No revisions have been proposed for the characteristic descriptors.