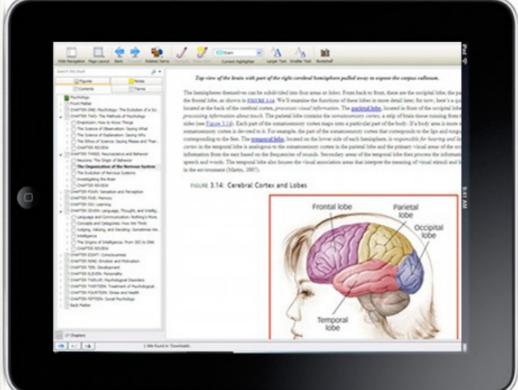
# Alexandria Community School Corporation



Be a yardstick of quality. Some people aren't used to an environment where excellence is expected.

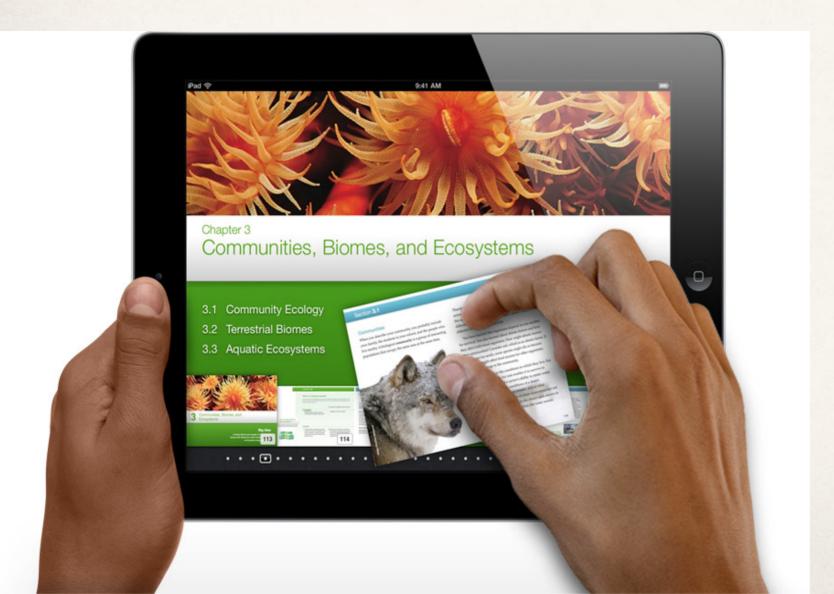
~Steve Jobs



# Technology Mission

Our 1:1 mission is to enhance accessibility, engagement and expression.

~Dr. Alice Johnson, Superintendent



# Technology Mission

Our 1:1 mission is to enhance accessibility, engagement and expression. ~Dr. Alice Johnson, Superintendent

Alexandria Community School Corporation is a flexible learning environment in which everyone is utilizing digital devices to:

- ♦ Access information in multiple ways, repeatedly, anytime.
- ♦ Collaborate and communicate in real time for immediate feedback to optimize scholarly engagement and productivity.
- ♦ Express depth of knowledge, concepts, and ideas through 21st Century digital media.

### Goals

Alexandria Community School Corporation is forging a path to improve and update our educational program by embracing 21st century digital learning opportunities. The overall goal of the ACSC Digital Learning Initiative is to create the best *Blended Learning* environment possible. This blend incorporates 24/7 digital learning opportunities into the valuable face-to-face classroom interactions between students, peers, and teachers.

The ACSC Digital Learning Initiative has five primary goals. We will keep these goals in the forefront of our implementation of the development plan. Our first four goals will get us to our ultimate target, #5, achievement.

- 1. Increase student engagement.
- 2. Increase individualized opportunities for students.
- 3. Increase 21st century skill development for students.
- 4. Decrease the digital divide that exists in our student body.
- 5. Increase student achievement.

### VISION

If we teach today's students as we did yesterday's, we are robbing them of tomorrow.

~John Dewey, 1859-1952

American Education Reformer

Alexandria Community School Corporation views effective use of 1:1 technology as necessary to maximize the learning potential of individual students.

### Teachers design learning sequences that guide students to utilize digital resources to:

- Access the curriculum through individual learning styles and needs. (Text, Audio, Video, Accessibility Features)
- Increase efficiency with teacher and student workflow through digital work submission and Feedback (My Big Campus/Google Classroom-Learning Management System)
- Student work products and assessments
- Increase authentic assessment
- Demonstrate Evaluation and Synthesis, analyzing through technology based products: i.e.: iMovies),
- Model learning with technology use to help students better understand the connection of technology to present and future learning,

### VISION

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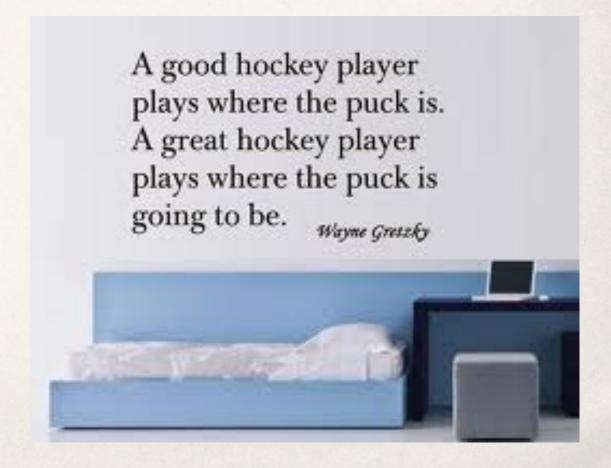
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American Education Reformer

Students participate in authentic learning experiences using technology that exceed Indiana Academic Standards. Through the effective use of technology, and under the guidance of a highly trained and capable teaching staff, students are better prepared for future academic study and also the world of work.

We are called to *start* realizing this vision by:

- Stop adopting textbooks and start training digital citizens.
- Training for Flip Instruction
   & Digital classroom work flow



# Rollout Vision

### 2013-14 School Year:

Goal:

Devices in Teachers Hands to Learn Device Basics of Productivity, Classroom Presentation and Workflow Management

### Roll Out: 2013-2014

#### August-October, 2013:

Faculty received iPads, MacBooks, Apple TV's, and either Projectors or TV Monitors.

#### July, October, December, 2013

Apple Training: iOS Devices, iOS Creativity, iOS Productivity, Language Arts Curriculum, Math Curriculum, Science Curriculum, Social Studies Curriculum

#### December 2013

- Tech Tuesday Focus: Device and Productivity Basics
- March 2014:
- Five Star Technology Solutions, LLC conducts Instructional Assessment and Technology Audit.
- Mobile Device Management System Installed (Absolute)

#### **April 2014:**

Tech Tuesday Focus: SAMR Model

#### May 2014:

Learning Management System: My Big Campus

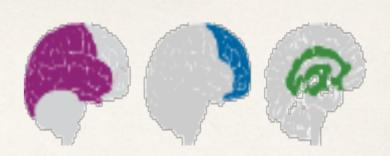
### Roll Out: 2014-2015

- Implement 8th Grade iPad Elective Rotation Course
- Pilot 1:1 iPad devices in one grade level per building.
- Test wireless & infrastructure capacity
- Network & Security features
- Absolute MDM (Mobile Device Management System)
- Develop Digital Citizenship Curriculum
- Design Scope and Sequence
- Test Common Sense Media

#### **Professional Development**

- Intensive SAMR Work Sessions for Tech/Curricular Integration
- Teachers post examination of unit lessons throughout the year to create ideas for SAMR Integration
- Workflow-My Big Campus; Google Classroom
- PATINS Accessibility
- UDL Training
- Teacher-Student iPad Basic Trouble Shooting
- Communication Document Review and Revision
- Parent roll out sequence, Responsible Use Policies, Restriction Guidelines, Student Rental & Fees

### Background Information



Why 1:1 Technology? By: Dr. Alice Johnson, Superintendent

Implementing 1:1 Technology is important for students to be up to date with current technology, to graduate with 21st Century Skills and to simply add efficiency to the entire process of teaching and learning.

As an educational leader, I have always tended to look at learning through the lens of brain development and coveted the literature on brain research, specifically Cognitive Neuroscience and Behavioral Psychology as the core of educational initiatives. While all of the above reasons are sufficient to a rationale for implementing a one to one technology learning environment, I contend the real reason is to provide a learning environment for all learners

that breaks down as many barriers to learning that humans and/or technology can crush. By providing students with the technology that allows them to experience curriculum delivered through the Universal Design for Learning (UDL), teachers can eliminate an enormous number of barriers, which in turn, provides enormous potential for increased student achievement.

Watch the following youtube link, UDL Presentation by J. Huskey. <a href="http://www.youtube.com/watch?v=MnvJRbBYHV0">http://www.youtube.com/watch?v=MnvJRbBYHV0</a>

### Learner Barriers: Access

Inequalities arise when information is presented to all learners through a *single* form of representation. An important instructional strategy is to ensure that alternative representations are provided not only for accessibility, but for clarity and comprehensibility across all learners.

Watch Cynthia Curry Video on Universal Design for Learning and Accessibility

https://itunes.apple.com/us/podcast/universal-design-for-learning/id380294489?i=84499369&mt=2

### Access: Options for Perceptions

- \* Key information is equally perceptible to all learners by:
  - providing the same information through different modalities (e.g., through vision, hearing, touch, video, text, audio, graphic representation, etc.);
  - \* providing information in a format that will allow for adjustability by the user (e.g., text that can be enlarged or spoken, sounds that can be amplified).

**Instructors & Learners Can Offer:** 

Ways of customizing the *display* of information; Alternatives for *auditory* information; and

Alternatives for visual information

### Access: Options for Verbal and Non-Verbal Representation.

\* Inequalities arise when information is presented to all learners through a *single* form of representation. An important instructional strategy is to ensure that alternative representations are provided not only for accessibility, but for clarity and comprehensibility across all learners.

**Clarify vocabulary and symbols:** The semantic elements through which information is presented – the words, symbols, numbers, and icons – are *differentially* accessible to learners with varying backgrounds, languages, and lexical knowledge.

\* To ensure accessibility for all, key vocabulary, labels, icons, and symbols should be linked to, or associated with, alternate representations of their meaning (e.g., an embedded glossary or definition, a graphic equivalent, a chart or map). Idioms, archaic expressions, culturally exclusive phrases, and slang, should be translated.

### Access: Options for Verbal and Non-Verbal Representation.

\* Inequalities arise when information is presented to all learners through a *single* form of representation. An important instructional strategy is to ensure that alternative representations are provided not only for accessibility, but for clarity and comprehensibility across all learners.

**Clarify syntax and structure:** Single elements of meaning (like words or numbers) can be combined to make new meanings. Those new meanings, however, depend upon understanding the rules or structures (like syntax in a sentence or the properties of equations) of how those elements are combined. When the syntax of a sentence or the structure of a graphical representation is not obvious or familiar to learners, comprehension suffers.

To ensure that all learners have equal access to information, provide alternative representations that clarify, or make more explicit, the syntactic or structural relationships between elements of meaning.

### \* Access: Options for Verbal and Non-Verbal Representation.

Support decoding text, mathematical notation, and symbols: The ability to fluently decode words, numbers or symbols that have been presented in an encoded format (e.g., visual symbols for text, haptic symbols for Braille, algebraic expressions for relationships) takes practice for any learner, but some learners will reach automaticity more quickly than others. Learners need consistent and meaningful exposure to symbols so that they can comprehend and use them effectively. Lack of fluency or automaticity greatly increases the cognitive load of decoding, thereby reducing the capacity for information processing and comprehension. To ensure that all learners have equal access to knowledge, at least when the ability to decode is not the focus of instruction, it is important to provide options that reduce the barriers that decoding raises for learners who are unfamiliar or dysfluent with the symbols.

#### Instructors & Learners Can:

Use Text to Speech, Automated Voicing with digital mathematical notation, Digital text with human voice recording (Daisy Talking Books), Multiple representations of notation (formulas, word problems, graphs), Offer clarification of notation through lists of key terms,

### Access: Options for Verbal and Non-Verbal Representation.

**Illustrate through multiple media:** Classroom materials are often dominated by information in text. But text is a weak format for presenting many concepts and for explicating most processes. Furthermore, text is a particularly weak form of presentation for learners who have text- or language-related disabilities. Providing alternatives - especially illustrations, simulations, images or interactive graphics – can make the information in text more comprehensible for any learner and accessible for some who would find it completely inaccessible in text.

#### **Teachers and Students Can:**

Present key concepts in one form of symbolic representation (e.g., an expository text or a math equation) with an alternative form (e.g., an illustration, dance/movement, diagram, table, model, video, comic strip, storyboard, photograph, animation, physical or virtual manipulative)

Make explicit links between information provided in texts and any accompanying representation of that information in illustrations, equations, charts, or diagrams

### Access: Provide Options for Comprehension

Individuals differ greatly in their skills in information processing and in their access to prior knowledge through which they can assimilate new information. Proper design and presentation of information – the responsibility of any curriculum or instructional methodology - can provide the scaffolds necessary to ensure that all learners have access to knowledge.

Activate or supply background knowledge: Information is more accessible and likely to be assimilated by learners when it is presented in a way that primes, activates, or provides any pre-requisite knowledge. Barriers and inequities exist when some learners lack the background knowledge that is critical to assimilating or using new information. However, there are also barriers for learners who have the necessary background knowledge, but might not know it is relevant. Those barriers can be reduced when options are available that supply or activate relevant prior knowledge, or link to the pre-requisite information elsewhere.

- Anchor instruction by linking to and activating relevant prior knowledge (e.g., using visual imagery, concept anchoring, or concept mastery routines)
- Use advanced organizers (e.g., KWL methods, concept maps)
- Pre-teach critical prerequisite concepts through demonstration or models
- Bridge concepts with relevant analogies and metaphors
- Make explicit cross-curricular connections (e.g., teaching literacy strategies in the social studies classroom)

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Highlight patterns, critical features, big ideas, and relationships: One of the big differences between experts and novices in any domain is the facility with which they distinguish what is critical from what is unimportant or irrelevant. Since experts quickly recognize the most important features in information, they allocate their time efficiently, quickly identifying what is valuable and finding the right "hooks" with which to assimilate the most valuable information into existing knowledge. As a consequence, one of the most effective ways to make information more accessible is to provide explicit cues or prompts that assist individuals in attending to those features that matter most while avoiding those that matter least.

- Highlight or emphasize key elements in text, graphics, diagrams, formulas\_
- Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships\_
- Use multiple examples and non-examples to emphasize critical features\_
- Use cues and prompts to draw attention to critical features
- Highlight previously learned skills that can be used to solve unfamiliar problems

### Access: Provide Options for Comprehension

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Guide information processing, visualization, and manipulation: Successful transformation of information into useable knowledge often requires the application of mental strategies and skills for "processing" information. These cognitive, or <a href="meta-cognitive">meta-cognitive</a>, strategies involve the selection and manipulation of information so that it can be better summarized, categorized, prioritized, contextualized and remembered. While some learners in any classroom may have a full repertoire of these strategies, along with the knowledge of when to apply them, most learners do not. Well-designed materials can provide customized and embedded <a href="models">models</a>, <a href="models">scaffolds</a>, and <a href="models">feedback</a> to assist learners who have very diverse abilities in using those strategies effectively.

- Give explicit prompts for each step in a sequential process
- Provide options for organizational methods and approaches (tables and algorithms for processing mathematical operations)
- Provide interactive models that guide exploration and new understandings
- Introduce graduated <u>scaffolds</u> that support information processing strategies
- Provide multiple entry points to a lesson and optional pathways through content (e.g., exploring big ideas through dramatic works, arts and literature, film and media)
- "Chunk" information into smaller elements
- Progressively release information (e.g., sequential highlighting)
- Remove unnecessary distractions unless they are essential to the instructional goal

### Access: Provide Options for Comprehension

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Maximize transfer and generalization: All learners need to be able to generalize and transfer their learning to new contexts. Students vary in the amount of scaffolding they need for memory and transfer in order to improve their ability to access their prior learning. Of course, all learners can benefit from assistance in how to transfer the information they have to other situations, as learning is not about individual facts in isolation, and students need multiple representations for this to occur. Without this support and the use of multiple representations, information might be learned, but is inaccessible in new situations. Supports for memory, generalization, and transfer include techniques that are designed to heighten the memorability of the information, as well as those that prompt and guide learners to employ explicit strategies.

- Provide checklists, organizers, sticky notes, electronic reminders
- Prompt the use of mnemonic strategies and devices (e.g., visual imagery, paraphrasing strategies, method of loci, etc.)
- Incorporate explicit opportunities for review and practice
- Provide templates, graphic organizers, concept maps to support note-taking
- Provide scaffolds that connect new information to prior knowledge (e.g., word webs, half-full concept maps)
- Embed new ideas in familiar ideas and contexts (e.g., use of analogy, metaphor, drama, music, film, etc.)
- Provide explicit, supported opportunities to generalize learning to new situations (e.g., different types of problems that can be solved with linear equations, using physics principles to build a playground)
- Offer opportunities over time to revisit key ideas and linkages between ideas

### \* Express: Provide options for physical action

It is important to provide materials with which all learners can interact. Properly designed curricular materials provide a seamless interface with common assistive technologies through which individuals with movement impairments can navigate and express what they know – to allow navigation or interaction with a single switch, through voice activated switches, expanded keyboards and others.

Vary the methods for response and navigation: Learners differ widely in their capacity to navigate their physical environment. To reduce barriers to learning that would be introduced by the motor demands of a task, provide alternative means for response, selection, and composition. In addition, learners differ widely in their optimal means for navigating through information and activities. To provide equal opportunity for interaction with learning experiences, an instructor must ensure that there are multiple means for navigation and control is accessible

- Provide alternatives in the requirements for rate, timing, speed, and range of motor action required to interact with instructional materials, physical manipulatives, and technologies
- Provide alternatives for physically responding or indicating selections (e.g., alternatives to marking with pen and pencil, alternatives to mouse control)
- Provide alternatives for physically interacting with materials by hand, voice, single switch, joystick, keyboard, or adapted keyboard

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Optimize access to tools and assistive technologies: Providing a child with a tool is often not enough. We need to provide the support to use the tool effectively. Many learners need help navigating through their environment (both in terms of physical space and the curriculum), and all learners should be given the opportunity to use tools that might help them meet the goal of full participation in the classroom. However, significant numbers of learners with disabilities have to use Assistive Technologies for navigation, interaction, and composition on a regular basis. It is critical that instructional technologies and curricula do not impose inadvertent barriers to the use of these assistive technologies. An important design consideration, for example, is to ensure that there are keyboard commands for any mouse action so that learners can use common assistive technologies that depend upon those commands. It is also important, however, to ensure that making a lesson physically accessible does not inadvertently remove its challenge to learning.

- Provide alternate keyboard commands for mouse action
- Build switch and scanning options for increased independent access and keyboard alternatives
- Provide access to alternative keyboards
- Customize overlays for touch screens and keyboards
- Select software that works seamlessly with keyboard alternatives and alt keys

### Express: Provide options for expression and communication

It is important to provide alternative modalities for expression, both to the level the playing field among learners and to allow the learner to appropriately (or easily) express knowledge, ideas and concepts in the learning environment.

Use multiple media for communication: Unless specific media and materials are critical to the goal (e.g., learning to paint specifically with oils, learning to handwrite with calligraphy) it is important to provide alternative media for expression. Such alternatives reduce media-specific barriers to expression among learners with a variety of special needs, but also increases the opportunities for all learners to develop a wider range of expression in a media-rich world. For example, it is important for all learners to learn *composition*, not just writing, and to learn the optimal medium for any particular content of expression and audience.

#### **Students Can:**

- Compose in multiple media such as text, speech, drawing, illustration, design, film, music, dance/movement, visual art, sculpture or video
- Use physical manipulatives (e.g., blocks, 3D models, base-ten blocks)
- Use social media and interactive web tools (e.g., discussion forums, chats, web design, annotation tools, storyboards, comic strips, animation presentations)
- Compose in multiple media such as text, speech, drawing, illustration, comics, storyboards, design, film, music, visual art, sculpture, or video
- Solve problems using a variety of strategies

#### Use multiple tools for construction and composition

### Express: Provide options for expression and communication

It is important to provide alternative modalities for expression, both to the level the playing field among learners and to allow the learner to appropriately (or easily) express knowledge, ideas and concepts in the learning environment.

Use multiple tools for construction and composition: There is a tendency in schooling to focus on traditional tools rather than contemporary ones. This tendency has several liabilities: 1) it does not prepare learners for their future; 2) it limits the range of content and teaching methods that can be implemented; 3) it restricts learners ability to express knowledge about content (assessment); and, most importantly, 4) it constricts the kinds of learners who can be successful. Current media tools provide a more flexible and accessible toolkit with which learners can more successfully take part in their learning and articulate what they know. Unless a lesson is focused on learning to use a specific tool (e.g., learning to draw with a compass), curricula should allow many alternatives. Like any craftsman, learners should learn to use tools that are an optimal match between their abilities and the demands of the task.

- Provide spellcheckers, grammar checkers, word prediction software
- Provide Text-To-Speech software (voice recognition), human dictation, recording
- Provide calculators, graphing calculators, geometric sketchpads, or pre-formatted graph paper
- Provide sentence starters or sentence strips
- Use story webs, outlining tools, or concept mapping tools
- Provide Computer-Aided-Design (CAD), music notation (writing) software, or mathematical notation software
- Provide virtual or concrete mathematics manipulatives (e.g., base-10 blocks, algebra blocks)
- Use web applications (e.g., wikis, animation, presentation)

### \* Express: Provide options for expression and communication

\* It is important to provide alternative modalities for expression, both to the level the playing field among learners and to allow the learner to appropriately (or easily) express knowledge, ideas and concepts in the learning environment.

Build fluencies with graduated levels of support for practice and performance: Learners must develop a variety of fluencies (e.g., visual, audio, mathematical, reading, etc.). This means that they often need multiple scaffolds to assist them as they practice and develop independence. Curricula should offer alternatives in the degrees of freedom available, with highly scaffolded and supported opportunities provided for some and wide degrees of freedom for others who are ready for independence. Fluency is also built through many opportunities for performance, be it in the form of an essay or a dramatic production. Performance helps learners because it allows them to synthesize their learning in personally relevant ways. Overall, it is important to provide options that build learners' fluencies.

- Provide differentiated models to emulate (i.e. models that demonstrate the same outcomes but use differing approaches, strategies, skills, etc.)
- Provide differentiated mentors (i.e., teachers/tutors who use different approaches to motivate, guide, feedback or inform)
- Provide scaffolds that can be gradually released with increasing independence and skills (e.g., embedded into digital reading and writing software)
- Provide differentiated feedback (e.g., feedback that is accessible because it can be customized to individual learners)
- Provide multiple examples of novel solutions to authentic problems

### Provide options for executive functions

At the highest level of the human capacity to act skillfully are the so-called "executive functions." Associated with networks that include the prefrontal cortex, these capabilities allow humans to overcome impulsive, short-term reactions to their environment and instead to set long-term goals, plan effective strategies for reaching those goals, monitor their progress, and modify strategies as needed.

Marzano Domain 1

- Guide appropriate goal-setting (Marzano Goal)
- Support planning and strategy development (Marzano Scales)
- Facilitate managing information and resources (Instructional strategies to help students remember information...graphic organizers, notes, templates, prompts, checklists)
- \* Enhance capacity for monitoring progress (Teaching students to monitor their own progress...self monitoring and reflection....)

# Collaborate and Communicate in real time

for immediate feedback to optimize scholarly engagement and productivity.

### **Provide Options for Recruiting Interest**

Information that is not attended to, that does not engage learners' cognition, is in fact inaccessible. It is inaccessible both in the moment and in the future, because relevant information goes unnoticed and unprocessed. It is, therefore, important to have alternative ways to recruit learner interest, ways that reflect the important interand intra-individual differences amongst learners.

Optimize individual choice and autonomy

Optimize relevance, value, and authenticity

Minimize threats and distractions

# Collaborate and Communicate in real time

for immediate feedback to optimize scholarly engagement and productivity.

### Provide Options for Sustaining Effort and Persistence

Many kinds of learning, particularly the learning of skills and strategies, require sustained attention and effort. When motivated to do so, many learners can regulate their attention and affect in order to sustain the effort and concentration that such learning will require. However, learners differ considerably in their ability to self-regulate in this way. Their differences reflect disparities in their initial motivation, their capacity and skills for self-regulation, their susceptibility to contextual interference, and so forth. A key instructional goal is to build the individual skills in self-regulation and self-determination that will equalize such learning opportunities. In the meantime, the external environment must provide options that can equalize accessibility by supporting learners who differ in initial motivation, self-regulation skills, etc.

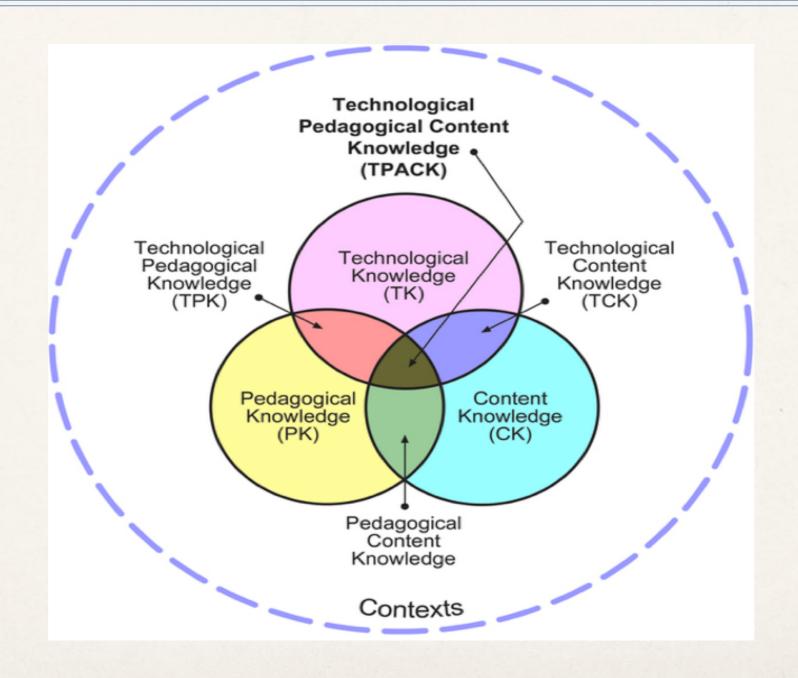
Heighten salience of goals and objectives

Vary demands and resources to optimize challenge

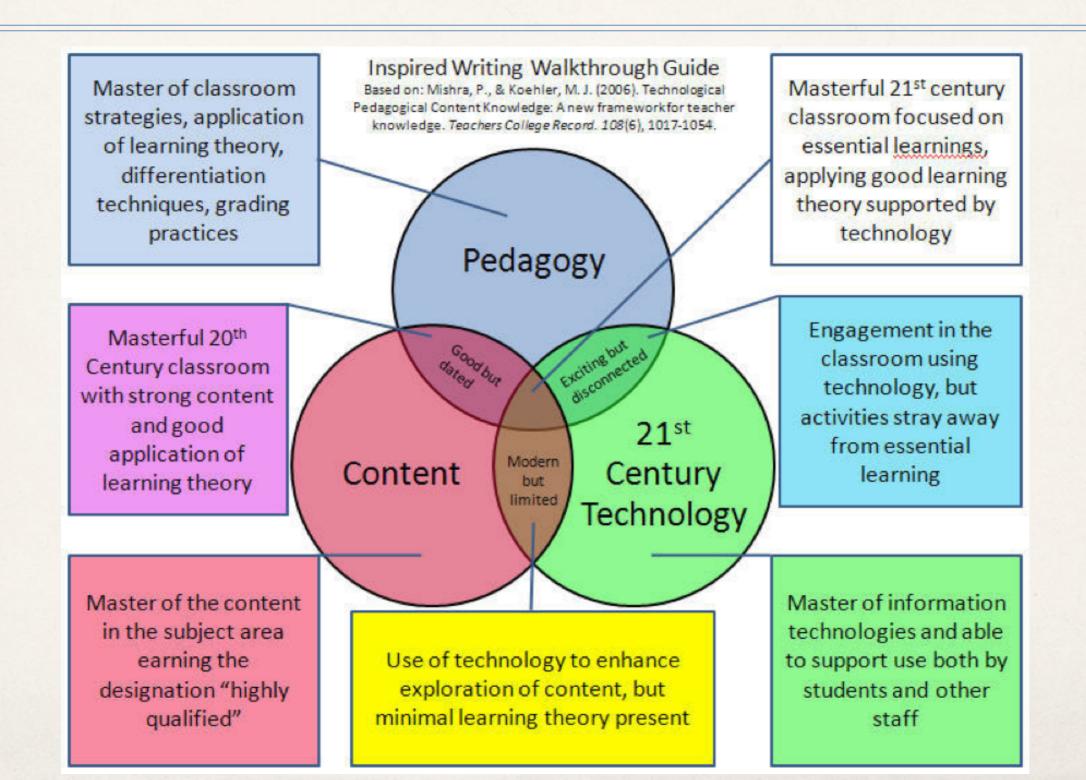
Foster collaboration and communication

**Increase mastery-oriented feedback** 

# TPACK Technological Pedagogical Content Knowledge



# TPACK Technological Pedagogical Content Knowledge



# ACSC Teacher Expectations

\* ACSC teachers will be expected to perform at Basic or above in every category during the first year of 1:1 mobile device access. Teachers should set professional goals to progress to Proficient or Advanced levels of performance during the second year of implementation. Detailed, accessible, and ongoing professional development will be provided to support teachers during the transformation.

# ACSC Teacher Expectations

- It is our expectation that all faculty members in each new digital cohort meet the ISTE.NETS.T standards for Advanced Digital Age Teaching listed here.
- 1. Facilitate and inspire student learning and creativity.
- 2. Design and develop digital-age learning experiences and assessments.
- 3. Model digital-age work and learning.
- 4. Promote and model digital citizenship and responsibility.
- \* 5. Engage in professional growth and leadership.

# Teacher Effectiveness Rubric Components

- The digital initiative is based on four main components:
- 1. Use of Digital Resources,
- 2. Use of Digital Tools,
- 3. Creation of a Productive Digital Citizenry, and
- 4. Implementation of a Digital Content.
- \* These components represent the essence of a digital learning environment. They are further defined below.