Rethinking Technology and Its Role in Education

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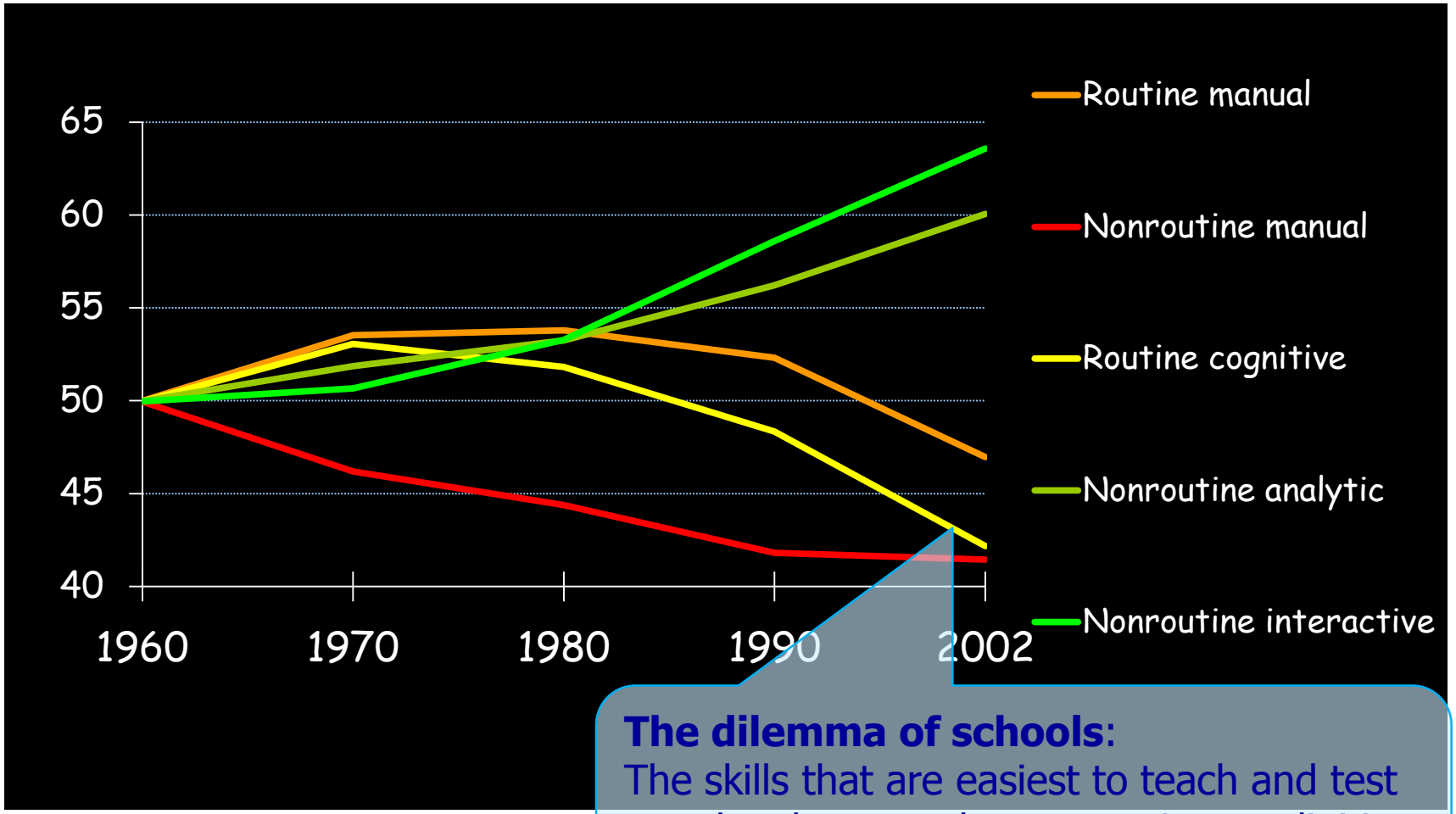
"Leading for educational excellence and equity. Every day for every one."

How the demand for skills has changed



The dilemma of schools:
The skills that are easiest to teach and test are also the ones that are easiest to digitise, automate and outsource

Key Takeaways

- **Rethink what is considered technology**
- **Don’t focus on the technology, but how is it being used.**
- **Technology doesn’t direct instruction, it supports instruction.**
- **Technology should change how we teach and learn, however.**
- **Effective uses of technology are active. engaging, and empowering; give the child control; and are used as one of many options to support children’s learning**

Group Discussion

- **What is your first memory of technology as a student?**
- **What is your first memory of technology as a teacher?**
- **What made each memorable?**

Technology

Example	Non-example
Definition	Characteristics

My 1st Technology Memories

What is technology?

- ***Technology*** **is anything that has been designed to solve a human want or need**
- **Technology includes products and processes**

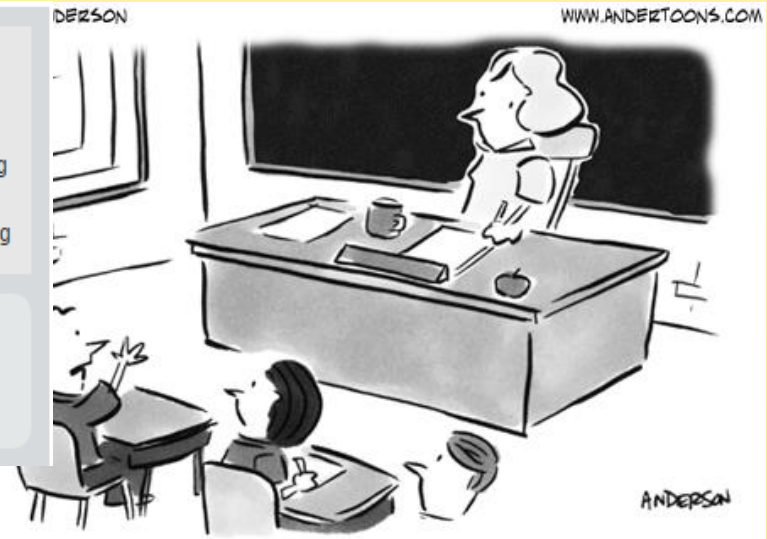
STANDARD K.1.2.1

Some objects occur in nature; others have been designed and processed by people.

Grade: K
Subject: Science
Strand: Nature of Science & Engineering
Substrand: The Practice of Engineering

BENCHMARK: K.1.2.1.1 Comparing Natural & Human Made
Sort objects into two groups: those that are found in nature and those that are human made.

For example: Cars, pencils, trees, rocks.



"How come Lewis and Clark didn't just use MapQuest?"

Personalized Learning

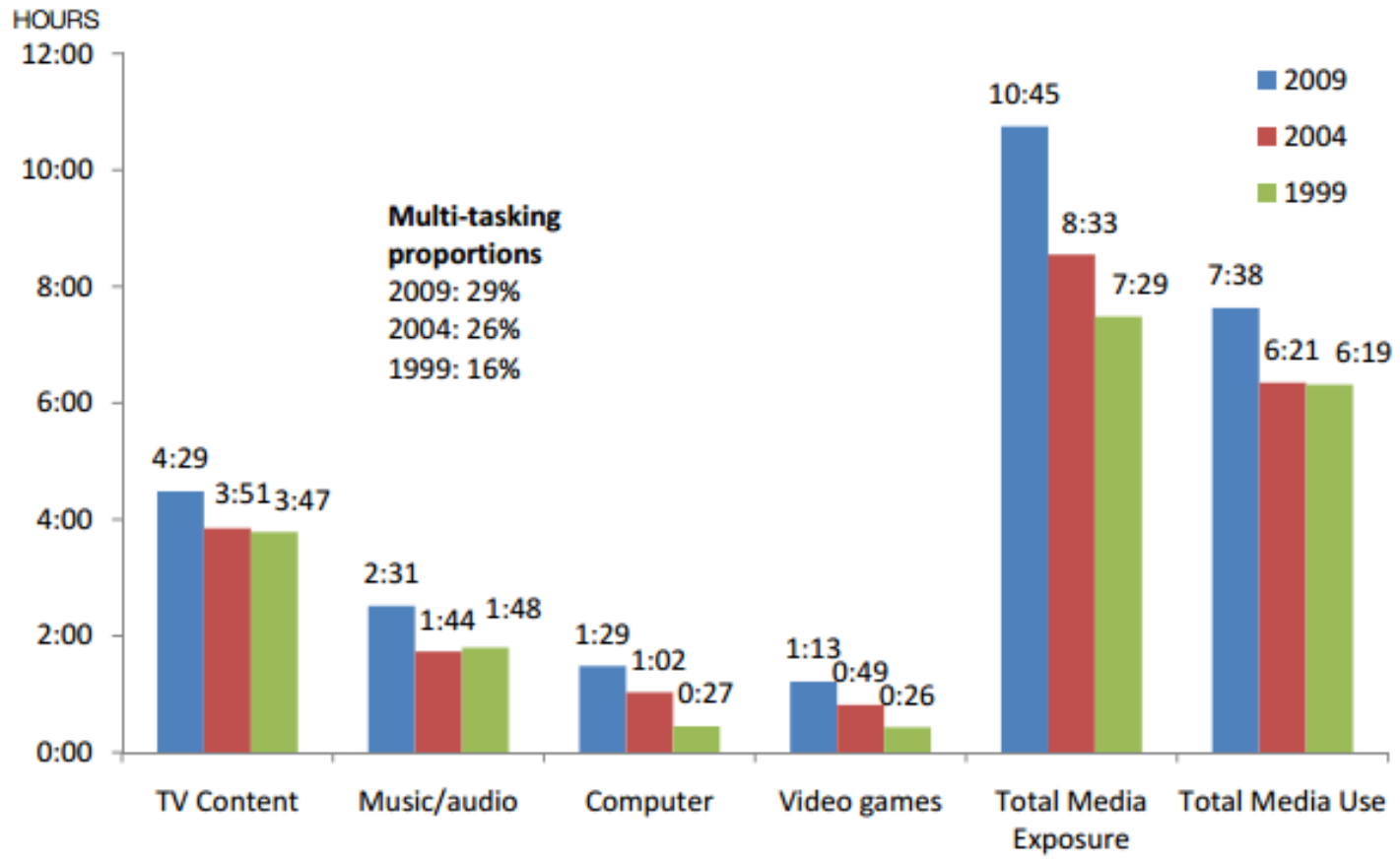
Educators leverage technology and diverse learning resources to personalize the learning experience for each student. Personalization involves tailoring content, pacing, and feedback to the needs of each student and empowering students to regulate and take ownership of some aspects of their learning.

Investigating (0-3)	Envisioning (4-5)	Planning (6-7)	Staging (8-10)
District leaders research personalized learning and document the characteristics of personalized learning environments and the requirements for building these characteristics.	A common vision for personalized learning is written and communicated, and includes rich scenarios of practice in multiple grade levels and content areas.	District leaders develop plans for promoting and/or expanding opportunities for personalized learning. Policies and access to technology are supportive of these plans.	District leaders prepare a plan for implementing personalized learning at all levels. This plan includes organizational tools, professional development, and examples of practice aimed at multiple levels and content areas.

http://futureready.org/

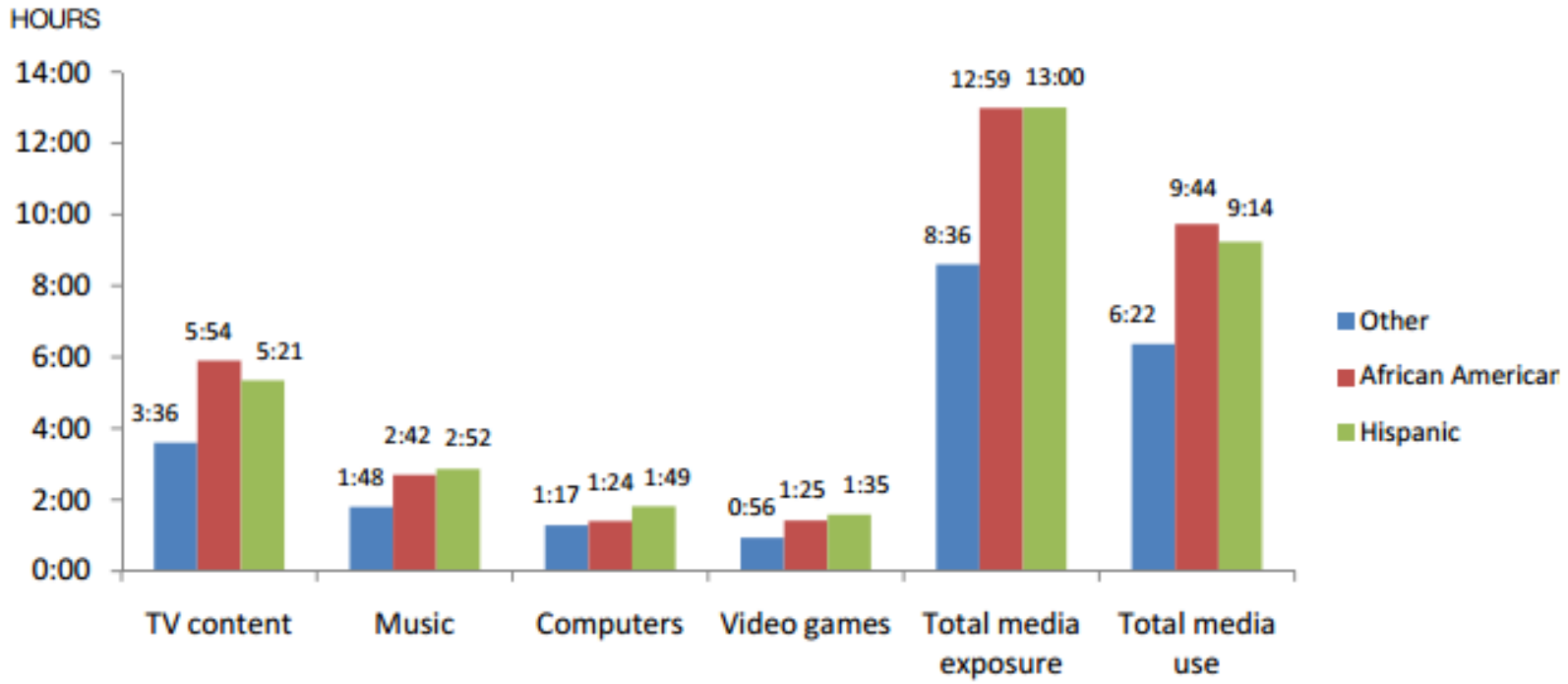
Generation M2 Media Usage

Figure 1: Generation M2—Media use over time; among all eight to 18-year-olds average amount of time spent with each medium per day in 2009, 2004 and 1999

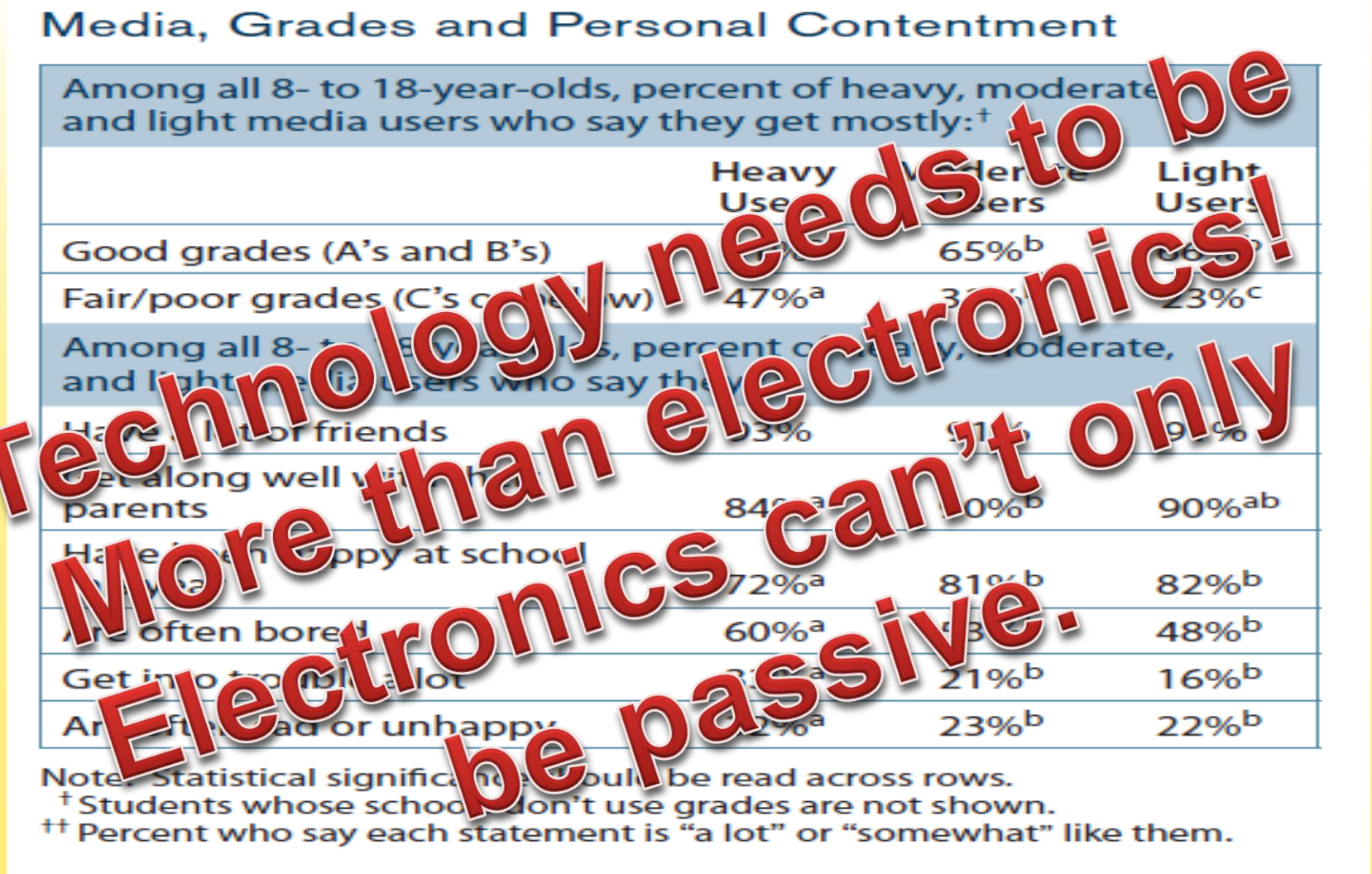


Ethnicity gap

Figure 3: Generation M2—Media use by race/ethnicity; average amount of time spent with each medium per day (2009)



Findings

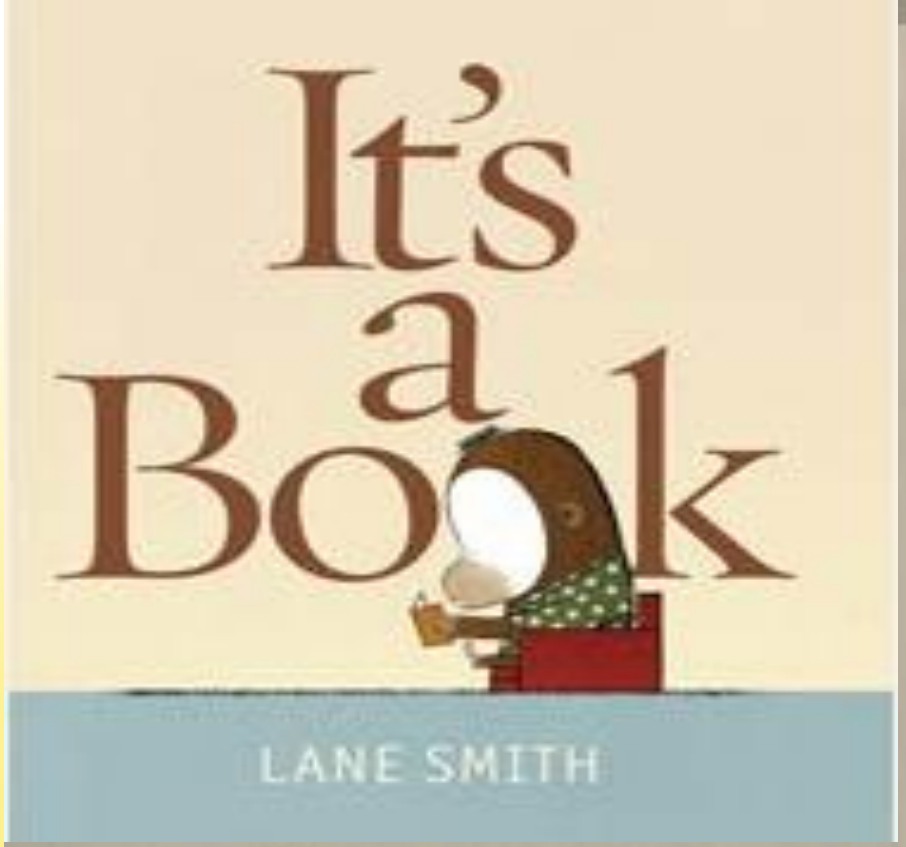


Media, Grades and Personal Contentment

Among all 8- to 18-year-olds, percent of heavy, moderate and light media users who say they get mostly:†	Heavy Users	Moderate Users	Light Users
Good grades (A's and B's)	[illegible]	65%[b]	[illegible]
Fair/poor grades (C's or lower)	47%[a]	[illegible]	23%[c]
Among all 8- to 18-year-olds, percent of heavy, moderate, and light media users who say they:			
Have a lot of friends	93%	91%	91%
Get along well with parents	84%[a]	90%[b]	90%[ab]
Have been happy at school	72%[a]	81%[b]	82%[b]
Are often bored	60%[a]	[illegible]	48%[b]
Get into trouble a lot	[illegible]	21%[b]	16%[b]
Are often sad or unhappy	[illegible]	23%[b]	22%[b]

Note: Statistical significances should be read across rows.
† Students whose schools don't use grades are not shown.
†† Percent who say each statement is "a lot" or "somewhat" like them.

Technology needs to be More than electronics! Electronics can't only be passive.



- https://www.youtube.com/watch?v=x4BK_2VULCU

Key considerations

- Amount of screen time
- Understand passive vs. active use
  - Passive consuming content
  - Active engages student thinking and interactivity
- Interaction with adults
- Increases learning opportunities for all children
  - Culturally responsive
  - Disabilities
- Family engagement

Identify a goal to start with

Transforming Learning Environments

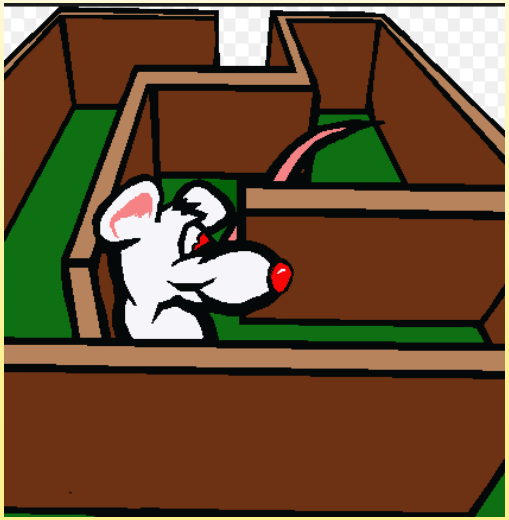
Traditional Environments		*Emerging Learning Landscape*
Teacher directed, memory-focused instruction	→	Student-centered, performance-focused learning
Isolated work on invented exercises	→	Collaborative work on authentic, real-work projects
Factual, literal thinking for competence	→	Creative thinking for innovation and original solutions
Primary focus on school and local community	→	Expanded focus including digital global citizenship
Isolated assessment of learning	→	Integrated assessment for learning
Knowledge from limited, authoritative sources	→	Learner-constructed knowledge from multiple information sources and experiences

Discuss

- **What goal do you want to work toward with technology integration?**
- **What are examples of technology (T and t) that support engaging students in learning in primary levels?**
- **How does broadening understandings of technology to empower teachers?**
- **How can we take electronic Ed Tech to be more active in the classroom?**

Technology Integration

- **Replacement**
- **Amplification**
- **Transformation**



Google Image

(Hughes, Thomas, Scharber, 2006)

Considerations with Technology for Personalization

- **Be clear about the learning destination and does not change with technology (TARGETS)**
- **Know where students are in relation to the destination (FORMATIVE ASSESSMENTS)**
- **Adjust teaching to make sure that students arrive at the destination (and move beyond it) (DIFFERENTIATED INSTRUCTION)**

Replacement

- Can I use this technology to substitute what I've done before?
- **Often about giving students multiple pathways to the same outcome.**
- **What outcomes do students engage with that needs multiple activities?**
- **What new tools allow for students to engage in different ways?**

Amplification

- Can I use this technology to enhance what I am currently doing?
- **Often about making instruction more efficient.**
- **What activities do we do that could be enhanced with technology?**
- **What tools are available to maximize learning time?**

Transformation

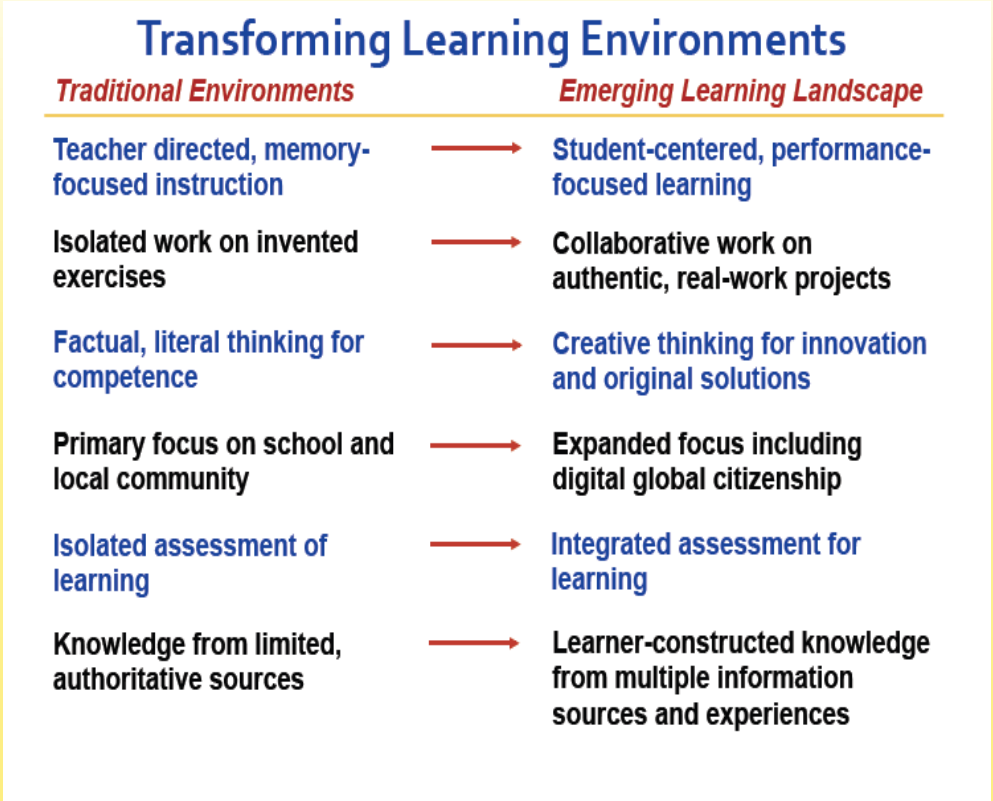
- Does this technology allow for change of how teaching and learning is currently done?
- **Often about innovation and taking risks.**
- **What concepts are difficult for students to understand?**
- **What tools can be used to help student understanding of these difficult concepts?**

Connecting Technology and Instruction

Keys to Implement Technology Integration

- **Leadership, staff, and community with shared vision**
  - Vision should include:
    - Student outcomes and learning goals,
    - Technologies that strengthen learning,
    - Infrastructure needs, and
    - Underlying belief statements about the value of technology for learning.
- **Support mechanisms for teachers and students**
  - Ongoing, sustained professional development on technology, pedagogy, and integration
  - Coaching or job embedded supports
  - Differentiation for students
  - Parent communication

- **RAT**
  - **Replace**
    - Is this technology a more effective replacement from what I've done before?
  - **Amplify**
    - Does this technology help to amplify what I am doing?
  - **Transform**
    - Does this technology transform the products or process of instruction or learning?



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