

Technology and Blended Learning in the Adult Education Classroom

August 2, 2017

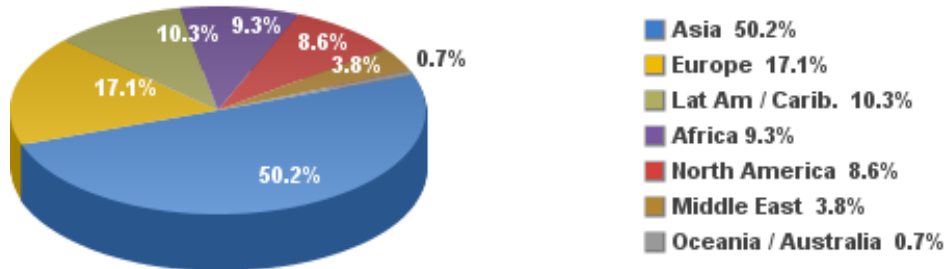


Mitch Rosin



Food for Thought

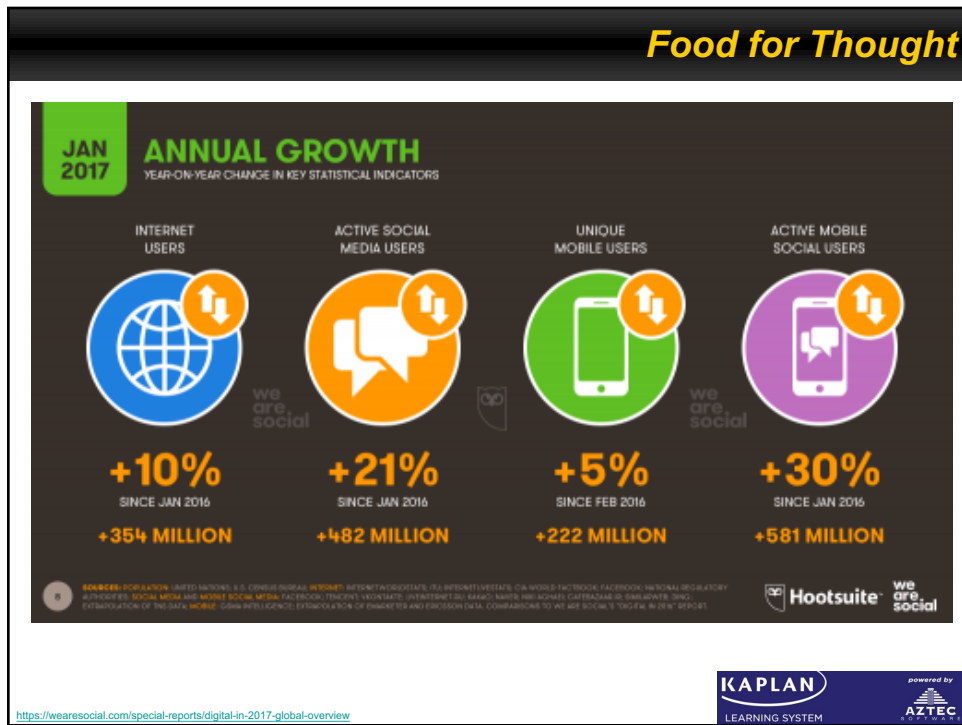
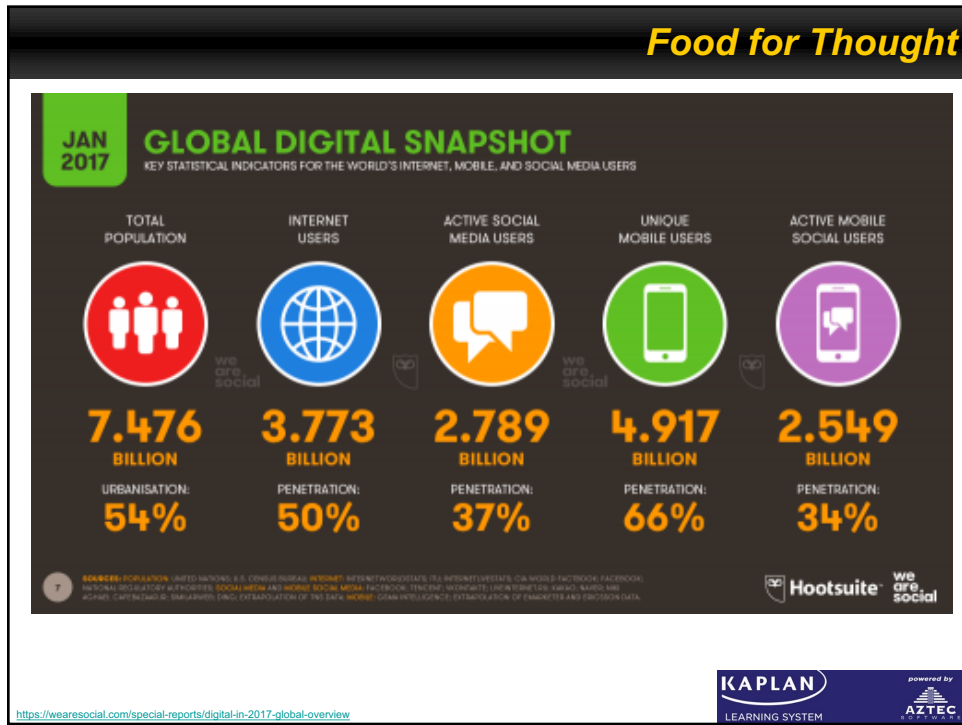
Internet Users in the World by Regions - March 25, 2017

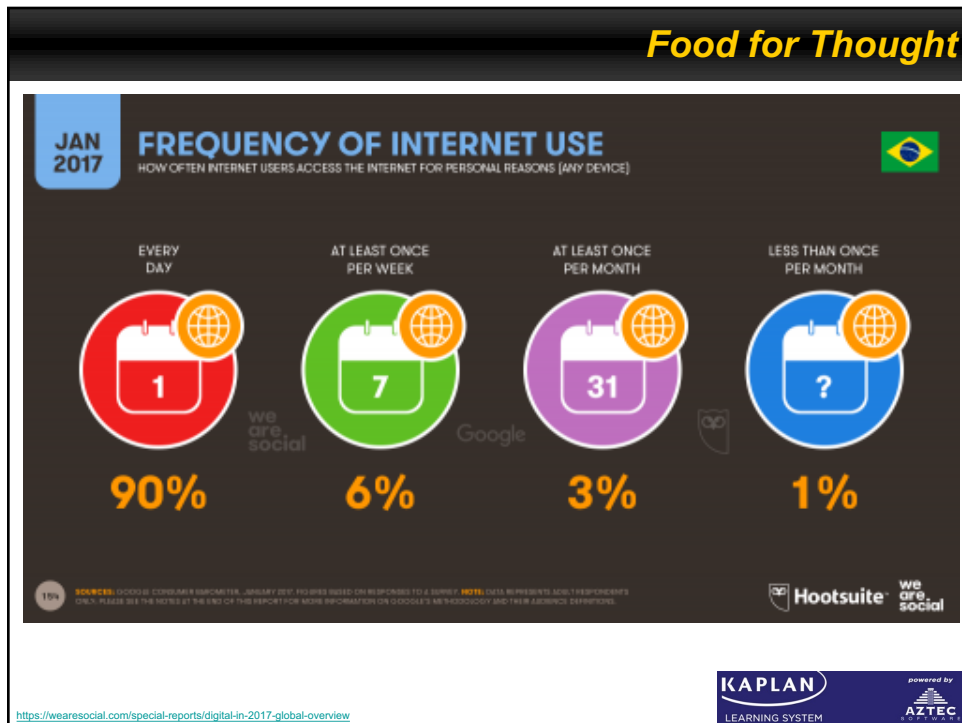
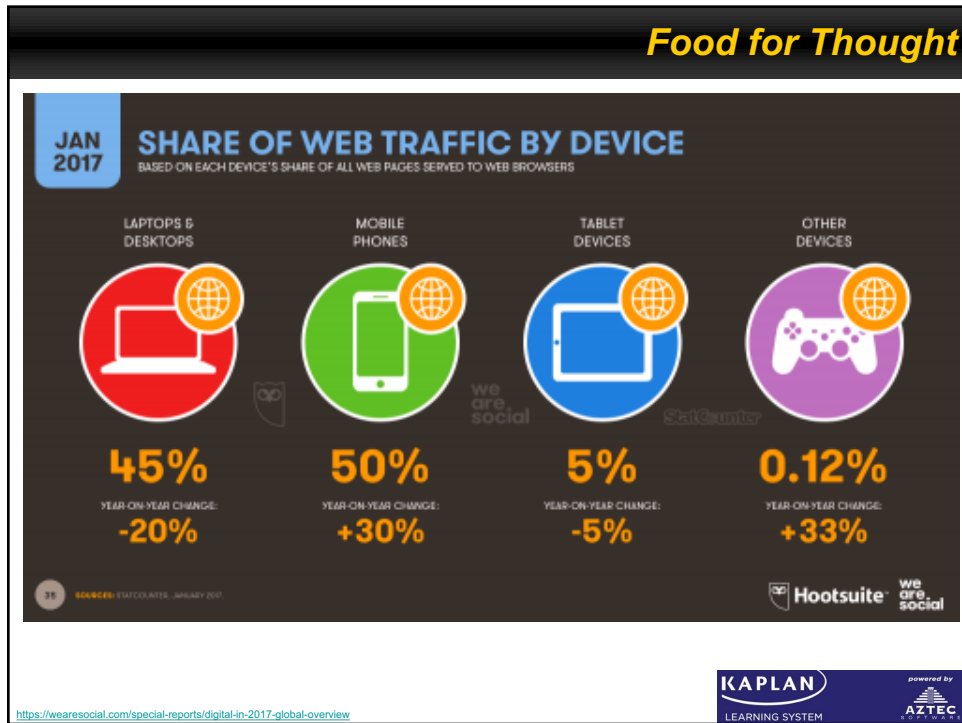


Source: Internet World Stats - www.internetworldstats.com/stats.htm
 Basis: 3,731,973,423 Internet users on March 31, 2017
 Copyright © 2017, Miniwatts Marketing Group

<https://wearesocial.com/special-reports/digital-in-2017-global-overview>







Food for Thought

Question

How many of you have used a mobile phone in the last hour?

For making a call?

For finding information/directions?

For posting/blogging?

For texting?



Food for Thought

2017 This Is What Happens In An Internet Minute



Created By: @LoriLewis @OfficiallyChadd



Andragogy vs Pedagogy

Andragogy vs Pedagogy



Andragogy vs Pedagogy

Question

**How do adults differ from children
as learners?**



Andragogy vs Pedagogy



https://twitter.com/powerful_pics/status/52312409089812352

Andragogy vs Pedagogy

Andragogy vs Pedagogy

Pedagogy is a child-focused teaching approach, whereas andragogy an adult-focused teaching approach;

or,

formally pedagogy is the art and science of helping kids learn, whereas andragogy is the art and science of helping adults learn.

Andragogy vs Pedagogy

Andragogy vs Pedagogy

Adults

- Have extensive, pragmatic life experiences that tend to structure and limit new learning.
- Learning focuses largely on transforming or extending the meanings, values, skills, and strategies acquired in previous experience.

MackKeracher, 2004

Children

- Have fewer pragmatic life experiences.
- Learning focuses largely on forming and accumulating basic meaning, values, skills, and strategies.



Andragogy vs Pedagogy

Andragogy vs Pedagogy

Adults

- Experience major pressures for change from factors related to family, work and community roles and expectations; and from personal needs for continuing productivity, self-definition, responsibility, and connection to others.

MackKeracher, 2004

Children

- Experience major pressures for change from factors related to physical growth and socialization, and preparation for the future family, work and community roles.



Andragogy vs Pedagogy

Andragogy vs Pedagogy

Adults

- Have learning needs related to current life situations and future expectations
- Have the capacity for using generalized, abstract thought

Children

- Have learning needs related to developing meaning and strategies for understanding current and future experiences
- Are more likely to use specific, concrete thought

MackKeracher, 2004



Andragogy vs Pedagogy

Andragogy vs Pedagogy

Adults

- Are likely to be able to verbally express their own needs and describe their own learning strategies, allowing them to negotiate and collaborate in planning their own learning problems
- Are assigned a responsible status in society and are expected to be productive

Children

- Are likely to non-verbally express their own needs and learning strategies, encouraging "expert" observers and interpreters to plan learning programs for them
- Are assigned a non-responsible status in society and are expected to play and learn

MackKeracher, 2004



Andragogy vs Pedagogy

Differences Between Children and Adults as Learners

ADULTS	CHILDREN
Decide for themselves what is important to be learned	Rely on others to decide what is important to be learned
Need to validate the information based on personal beliefs and experiences	Accept information being presented at face value, facts
Expect what they are learning is immediately useful	Expect what they are learning to be useful in their long-term future
Have life experience upon which to draw – may have fixed viewpoints	Have little or no experience upon which to draw – are relatively “clean slates”
Significant ability to be a knowledgeable resource to instructor and fellow learners	Little, or no, ability to serve as a knowledgeable resource to teacher or fellow classmates

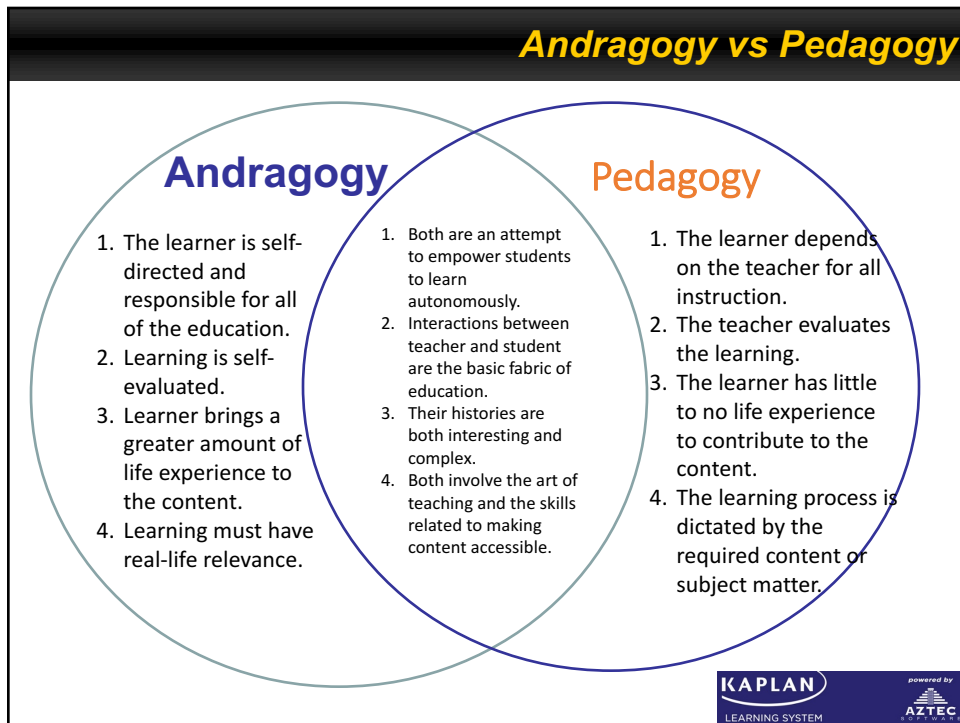
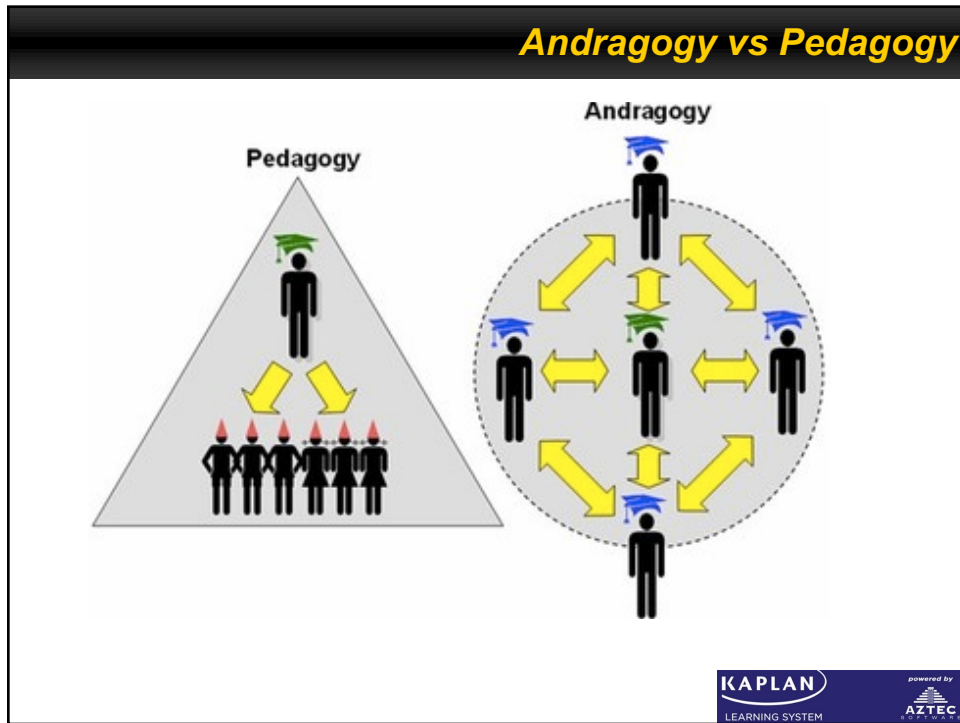


Andragogy vs Pedagogy

Differences Between Andragogy and Pedagogy

ANDRAGOGY	PEDAGOGY
Climate of <u>mutual respect</u> and collaboration	Format and <u>authoritative climate</u> ; traditional classroom environment
<u>Planning, diagnosis</u> of needs and formulation of objectives is done with mutual cooperation and negotiation	Teacher is in control of planning, diagnosis of needs, and formulation of objectives
<u>Evaluation and progress</u> measured by mutual discussion between student and instructor	Evaluation and progress measured by the teacher
<u>Problem solving approach</u> to delivery of information	Subject centered delivery of information
Extremely <u>conducive to self-directed learning</u> and individual initiative to learn more	<u>Little self-directed learning</u> as the student looks to the teacher for all learning cues





Research: Tyton Partners – Learning for Life



LEARNING FOR LIFE:

THE OPPORTUNITY FOR TECHNOLOGY TO TRANSFORM ADULT EDUCATION

PART 1: INTEREST IN AND APTITUDE FOR TECHNOLOGY

<http://tytonpartners.com/library/learning-for-life-the-opportunity-for-technology-to-transform-adult-education/>



Research: Tyton Partners – Learning for Life

The Survey

- Conducted in November 2014, the survey collected data from more than 1,000 program administrators and practitioners across the adult education system.
- The number of US adults lacking basic skills in the areas of literacy, numeracy, and digital literacy is substantial
 - nearly one in six US adults maintains low literacy skills
 - nearly one in three possesses low numeracy skills
- There are roughly **36 million US adults struggling with the consequences of low skills**, but the adult education system today serves only 4.1 million adults, or 11% of those in need.



Research: Tyton Partners – Learning for Life

The Survey

- Technology infrastructure is strong across the adult education system.
- 80%+ reported consistent access to the Internet and on-site computers.
- Most adult education program instructors reported that they are comfortable using technology and believe they have the ability to leverage technology in a professional setting.
- Fewer than 1:5 adult education professionals feels that technology can be challenging or difficult.
- Investing in technology is a budget priority for the majority of program administrators.

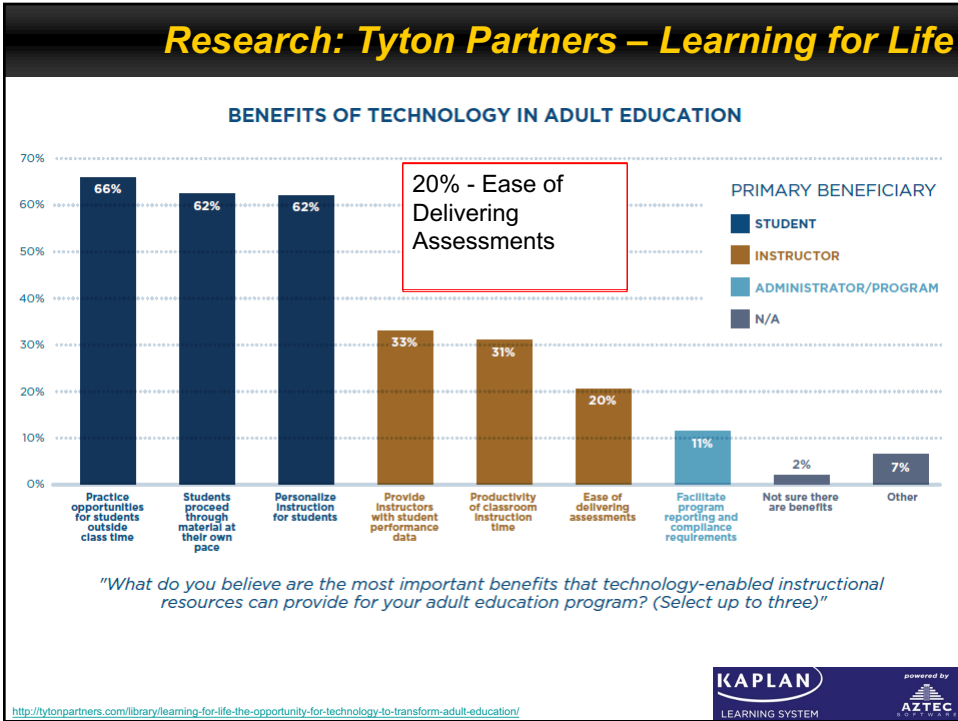
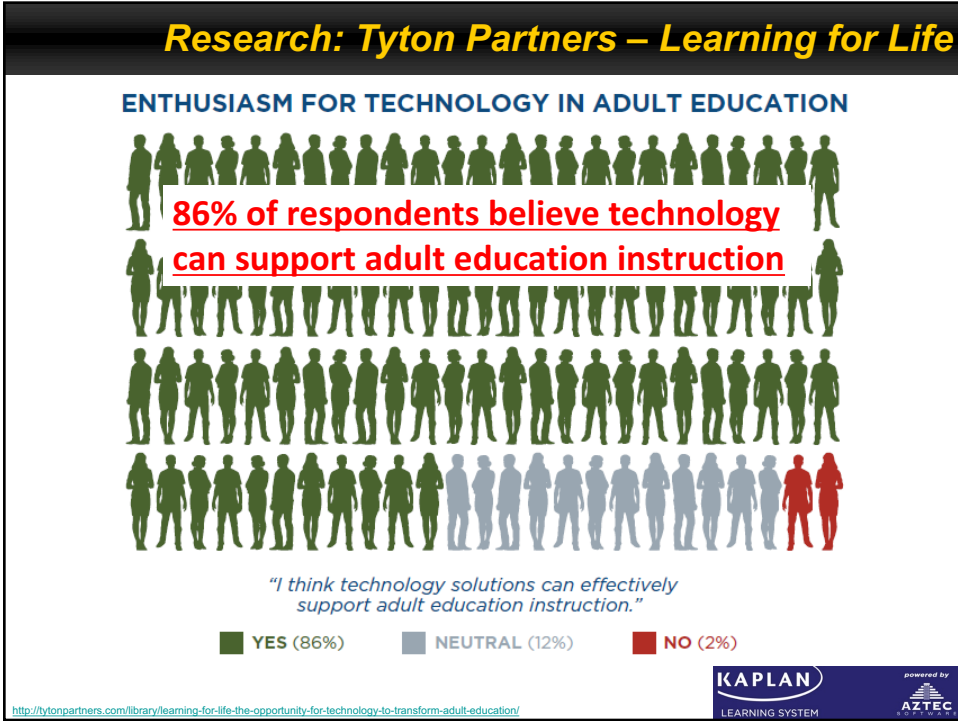


Research: Tyton Partners – Learning for Life

The Survey

- Almost 90% of adult education programs leverage free, open educational resources to support instruction.
- 55% - 75% of adult education students own smartphones.
- The majority of program administrators and instructors believe that smart phone devices have the potential to improve engagement and instruction.

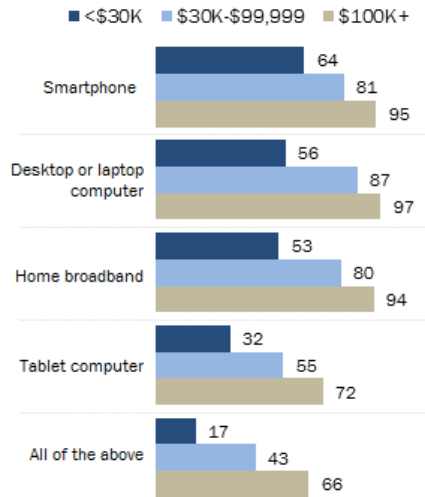




Pew Research 2017

Lower-income Americans continue to lag behind in technology adoption

% of U.S. adults who have the following ...



Income Drives Technology Adoption

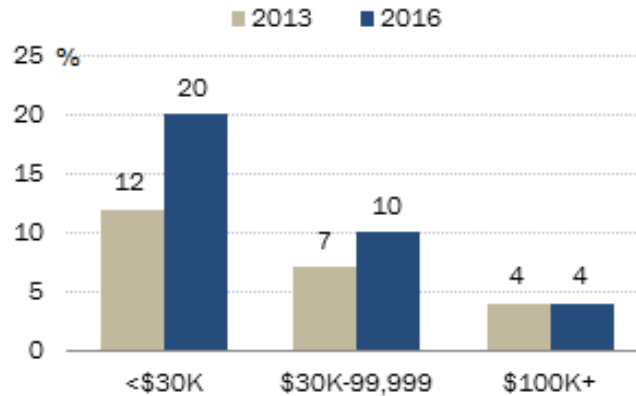
<http://www.pewresearch.org/fact-tank/2017/03/22/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/>



Pew Research 2017

Growing share of low-income Americans are smartphone-only internet users

% of U.S. adults who have a smartphone but no broadband at home, by annual household income

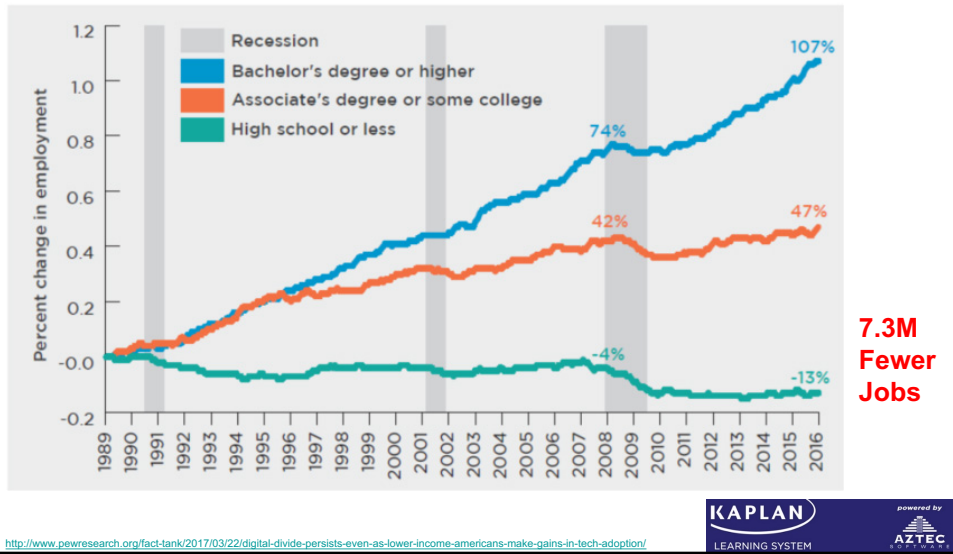


<http://www.pewresearch.org/fact-tank/2017/03/22/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/>



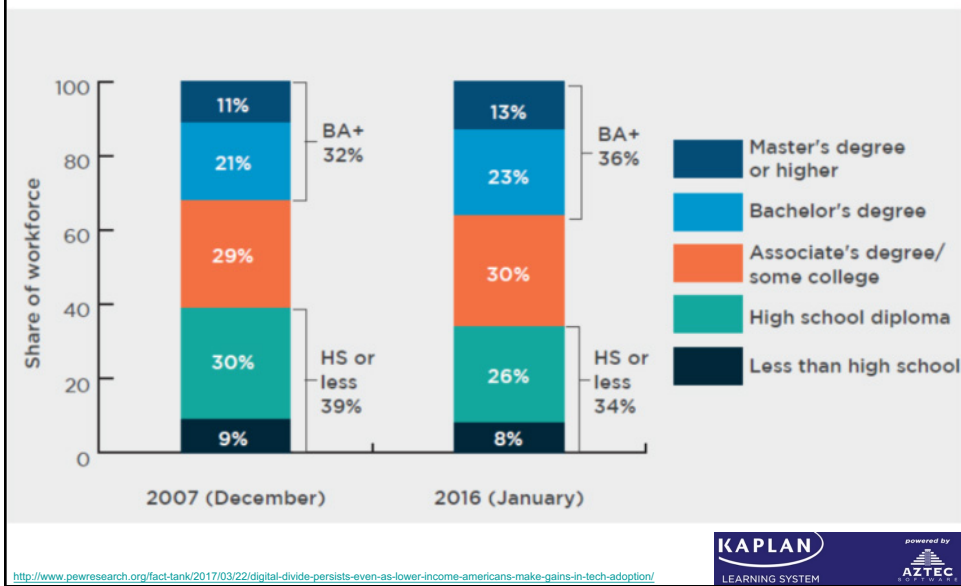
Why is this Important?

The number of workers with a Bachelor's degree or higher has more than doubled (107%) since 1989.



Why is this Important?

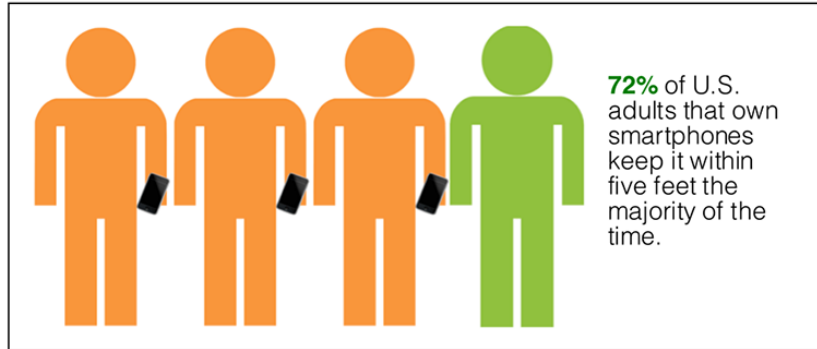
Workers with a Bachelor's degree or higher now make up a larger share of the workforce (36%) than workers with a high school diploma or less (34%).



Smart Phones

SMARTPHONE BEHAVIOR OF U.S. ADULTS

Nearly three-quarters of respondents report being within five feet of their smartphones most of the time:

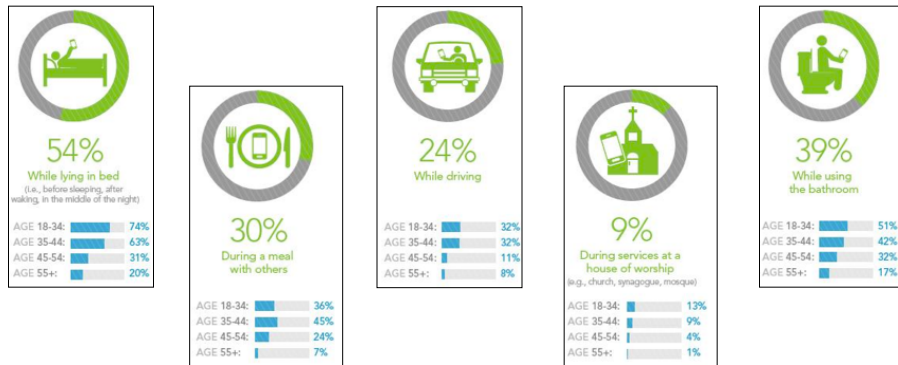


<https://www.jumio.com/app/uploads/2013/07/nr2.png>



Smart Phones

Where do people check their phones?



http://freshpeel.com/wp-content/uploads/2012/06/Where_People_Check_Mobile_Phones.png



Smart Phones

What Do You Do When You First Wake Up?

Our interaction with each other through our phones begins as soon as we awake. Within the first 15 minutes of waking up, **4 out of 5** smartphone owners are checking their phones and among these people, nearly 80% reach for their phone before doing anything else. These statistics alone drive home the utility of and reliance on smartphones.

Within the **first 15 minutes** of waking up, **4 out of 5** smartphone owners are checking their phones.

Among All Respondents

79% reach for phone within 15 minutes of waking

62% reach for it immediately after waking

44% reach for it immediately & use as alarm clock

Among 18-24 year olds

89% reach for phone within 15 minutes of waking.

74% reach for it immediately after waking

54% reach for it immediately & use as alarm clock

<http://www.adweek.com/socialtimes/files/2013/04/Screen-Shot.png>

Smart Phones

More than Half of Smartphone Owners Have Used Their Phone to get Health Information, do Online Banking

% of smartphone owners who have used their phone to do the following in the last year

Get info about a health condition	62
Do online banking	57
Look up real estate listings or info about a place to live	44
Look up info about a job	43
Look up government services or info	40
Take a class or get educational content	30
Submit a job application	18

Smartphone Ownership is Often Most Tenuous for Those Who Rely on Their Devices the Most

% of smartphone owners in each group who have experienced the following

	"Smartphone-dependent"	Other smartphone owners
Have had to cancel or suspend service due to financial constraints	48	21
Frequently/occasionally reach maximum data allowed on smartphone plan	51	35

<http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/>

Smart Phones

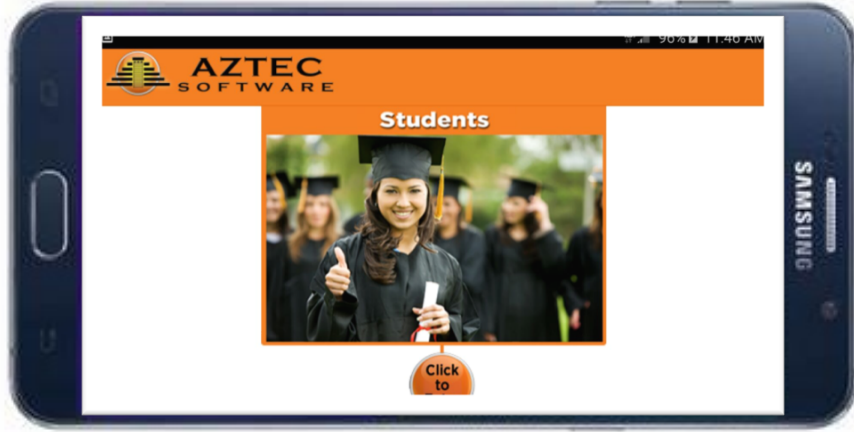
www.learn.aztecsoftware.com

KAPLAN LEARNING SYSTEM powered by **AZTEC** SOFTWARE

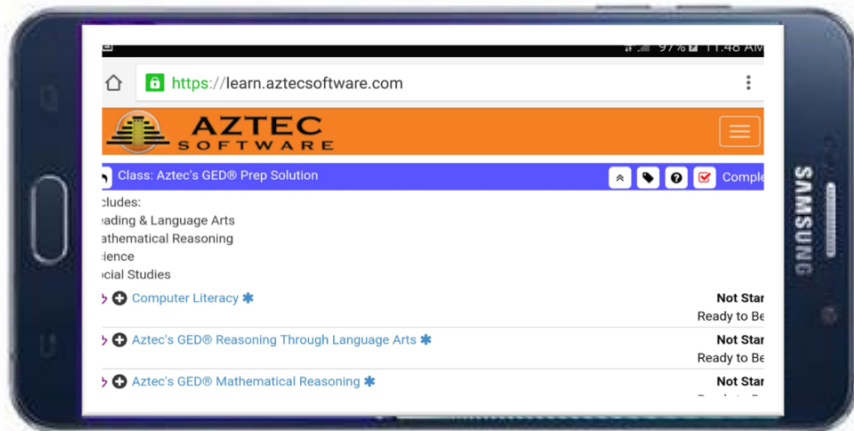
Smart Phones

KAPLAN LEARNING SYSTEM powered by **AZTEC** SOFTWARE

Smart Phones



Smart Phones



Research: NCSALL - Learning with Computers



National Center for the Study
of Adult Learning and Literacy

Effective Uses of Technology in the Adult Education Classroom

When researchers have compared more and less effective uses of technology, they have noticed that computer use that involves one or more of the following appears to be most successful:

- Critical thinking skills
- Customization and student interests
- Human interaction
- Student collaboration
- Accommodating disabilities
- Using drill for memorization
- Performing real-life tasks
- Performing complex tasks

<http://www.ncsall.net/index.php?id=303.html>



Research: NCSALL - Learning with Computers

Technology can tap different skills than do textbooks and group work.

Students can:

- develop complex thinking skills
- analyze and read critically
- explain what they believe and why they believe it
- examine their thinking processes by engaging in dialogues
- develop is the ability to compare and evaluate information
- find texts with opposing viewpoints that can generate student discussion and debate

Teachers can:

- develop evaluation skills by downloading materials from the Internet to use in conventional classes
- have students to search for information and then evaluate the credibility of the sources

<http://www.ncsall.net/index.php?id=303.html>



Research: NCSALL - Learning with Computers

Increased Interest

- Many adult education teachers have seen a **student's engagement increase** when they wrote word problems based on a student's favorite sport, hobby, or life experience.
- ABE teachers should seek out software that incorporate these **motivational features**.
- Spreadsheets, calculator software, word processing programs, and some math programs can **relieve students of tedious calculating and copying**, freeing them to focus on understanding concepts.
- Students can use computers to perform many **real-world math** tasks, similar to the way spreadsheets are used in the workplace.
- **Students rewrite more often** when they use word processors because they do not have to tediously recopy everything they have written.

<http://www.ncsall.net/index.php?id=303.html>



Research: NCSALL - Learning with Computers

Interactivity

- Studies of both traditional pencil-and-paper methods and distance learning show that **student-teacher and student-student interaction are vital** to enabling students to learn.
- Interactive methods include **real-time chat rooms, electronic discussion lists and bulletin boards, threaded discussion lists**, telephone conferencing, and face-to-face meetings.
- **Building human interaction into distance learning** may be more effective because teachers and fellow students ask questions that require high-level thinking skills.
- **Game-type interaction is not enough** to keep distance learning students engaged.
- Much educational software is called interactive, but does not truly "interact" with the student: it just tells if a question is answered correctly. This helps to memorize facts but not build deep understanding or critical thinking skills.
- **Only the most sophisticated artificial intelligence programs developed by universities can give constructive** feedback similar to the interaction between a human teacher and a student.

<http://www.ncsall.net/index.php?id=303.html>



Research: NCSALL - Learning with Computers

Collaboration

- ABE teachers find that **students learn better when they work in groups** to solve a problem
 - Project-based learning (working together on real-life class projects)
 - Jigsaws (splitting students into "expert" groups who report back to each other)
 - Other cooperative learning methods help students to solve more difficult problems than they could on their own, learn from each other, and build critical teamwork skills.
- Educational computing researchers are designing applications that allow students to work collaboratively by **linking many classrooms or many students in a classroom**. These projects have resulted in **increased student learning and motivation**.
- **Students who used the computers collaboratively showed better results on tests of deep understanding of the topic**, using what they had learned in a new situation, learning more for understanding (rather than just to pass a test), and also scored higher on standardized tests.

<http://www.ncsall.net/index.php?id=303.html>



Research: NCSALL - Learning with Computers

Accommodation

- **Text-reading software and hardware**, as well as books on tape, are used to read books to students with visual disabilities and learning disabilities. Having students read along while listening to books on tape is highly recommended for those with reading difficulties.
- **Speech-recognition software** is used to help students with physical and visual disabilities and learning disabilities to learn to write.
- The **ability to revise quickly using word processing programs, combined with spell-checking features**, has been found to improve all students' writing.
- Online applications have been used extensively in classes of English for speakers of other languages (**ESOL**) and in language labs. This technology can help learners build **pronunciation and listening skills**.
- **Reading technology can help learning-disabled students build content knowledge**, word processing and voice recognition can help students focus more on their ideas while worrying less about spelling and mechanics, and language labs can improve students' English pronunciation and listening skills.

<http://www.ncsall.net/index.php?id=303.html>



Research: NCSALL - Learning with Computers

Memorization

- Most education researchers agree that **multiplication and addition tables** and correct spelling must be memorized. This information needs to be "overlearned" so that the answers come automatically, without thinking, freeing students' minds to think about and understand what they are doing. **Computers can be an excellent tool for memorization of basic facts.** Thousands of drill-based programs have been developed for schools, and they are largely successful at reinforcing disconnected skills.
- Several studies have shown that students who have trouble with basic skills benefit from computer practice on a small number of items at a time. For facts that need to be memorized, drill-based programs can provide effective practice on students' weak areas and can accelerate training. **ABE teachers can use drill-and-practice strategically, to reinforce basic skills when students need more practice and more variety than they are getting from paper-and-pencil tasks.**
- Adult learners in particular want learning to be relevant and useful. **Technology has been effective when it is used in classrooms to do real-life tasks:** writing a resume, making a household budget using a spreadsheet, or searching for health information on the Internet. Researchers have found that when software includes tasks in which students are interested, they learn better.

<http://www.ncsall.net/index.php?id=303.html>



Research: NCSALL - Learning with Computers

Thinking Tools

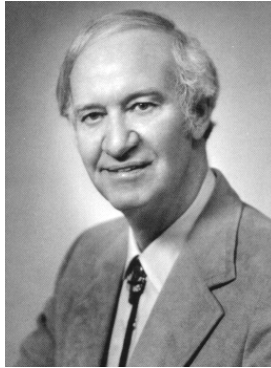
- Computers can store huge amounts of information that they will never forget, they can organize and retrieve that information very quickly, and they can do very complex **calculations** very quickly.
- "**Computers as cognitive tools**" applications can allow students to test ideas, such as the **effect of raising the minimum wage**, by having the computer perform the huge, complex calculations that students could not do themselves.
- A few simulation applications are available from publishers of high school textbooks that could be used with ABE students.

<http://www.ncsall.net/index.php?id=303.html>



Principles of Andragogy

Who is this?



Malcolm Shepherd Knowles (1913 – 1997)

Assumptions of Adult Learners

Knowles' Assumptions of Adult Learners

1. As a person matures, his or her self-concept moves from that of a dependent personality toward one of a self-directing human being.
2. An adult accumulates a growing reservoir of experience which is a rich learning source.
3. The readiness of an adult to learn is closely related to the developmental tasks of his or her social role.
4. There is a change in time perspective as people mature – from future application of knowledge to immediacy of application. Thus, an adult is more problem centered than subject centered in learning.
5. Adults are mostly driven by internal motivation, rather than external motivators. Adults need to know the reason for learning something.

Assumptions of Adult Learners

Assumption #1. Self-Concept – Involve Adult Learners

Create learning experiences that offer minimum instruction and maximum autonomy.

- Adult learners need a support system to offer guidance and help, while still allowing students to learn on their own terms.
- Adult learners acquire new information and build upon existing knowledge more effectively if they are encouraged to explore a topic on their own.
- Adult learners will typically get more out of the experience if they are able to work autonomously (Self-Study or Group Collaboration Projects, Simulations, Scenarios).

Merriam & Bierema, 2014



Assumptions of Adult Learners

Assumption #2. Adult Learner Experience

Include a wide range of instructional design models and theories to appeal to varied experience levels and backgrounds.

- Adult learners incorporate life experiences and have a wide knowledge base (backgrounds, experience, skill sets).
- Some learners use technology, others may have little experience.
- Include a variety of instructional design models and theories into your eLearning course.
- Survey students to determine technical knowledge limitations they may have, as well as to assess their education levels.

Merriam & Bierema, 2014



Assumptions of Adult Learners

Assumption #3. Readiness to Learn (Relevance and Impact)

Utilize social media and online collaboration tools to tie learning to social development.

- Adult learners prefer learning experiences with social development benefit.
- Social media and online collaboration tools can be valuable.
- Create activities that encourage adult learners to use sites like LinkedIn and Google Plus as tools.
- This helps to not only build social networks, but collaborate with those who share the same interests.

Merriam & Bierema, 2014



Assumptions of Adult Learners

Assumption #4. Orientation to Learning (Problem Centered)

Emphasize how the subject matter is going to solve problems that an adult learner regularly encounters.

- Adult learners need to know the why and when before they actively engage in the eLearning process.
- Adult learners prefer to engage in eLearning experiences that help them to solve problems they encounter on a regular basis (in the here-and-now, rather than the future).
- Emphasize how the subject matter is going to help solve problems immediately by offering real world examples and scenarios.

Merriam & Bierema, 2014



Assumptions of Adult Learners

Assumption #5. Motivation to Learn

There must be a valid reason behind every eLearning course, module or educational activity.

- Motivate learners by offering a reason for every eLearning activity, assessment, or eLearning module.
- When asking adults to complete a group collaboration task, clearly define that the exercise will help to build team working and communication skills.
- Adult learners need to feel as though they are more involved in the process of learning.

Merriam & Bierema, 2014



Principles of Andragogy

Principle of Andragogy #1

Adults must have a hand in the design and development of their learning experience.

- Online learners must feel as though they are playing an active role in their own eLearning experience.
- They must truly be an integral part of the development and implementation of the curriculum, as well as of the evaluation process.
- Getting feedback from adults allows you to achieve this, as it offers you the opportunity to design learning materials, exams, and activities based upon the needs and wants of the adult learners.

<https://elearningindustry.com/?top-apply-adult-learning-theory-to-learning>



Principles of Andragogy

Principle of Andragogy #2

Experience should be at the root of all eLearning tasks and activities.

- What matters for adult learners is that the eLearning experience is gathered through instruction and activities.
- Rather than offering memorization tasks, create projects and exercises that encourage adults to go out and explore the subject matter, thereby gaining experience.
- Adults can learn from their errors and master their skills sets through first-hand experience.

<https://elearningindustry.com/?tip=apply-adult-learning-theory-to-learning>



Principles of Andragogy

Principle of Andragogy #3

Real life applications and benefits must be tied to the eLearning course.

- Adults need to be able to tie the subject matter to real world benefits and applications.
- Increase engagement by integrating scenarios into eLearning courses.

<https://elearningindustry.com/?tip=apply-adult-learning-theory-to-learning>



Principles of Andragogy

Principle of Andragogy #4

Give adult learners the opportunity to absorb information, rather than memorizing it.

- Content in eLearning courses should be problem-centered so learners see how the instructions will help to solve an issue they might encounter outside of the eLearning environment.
- Subject matter should offer the chance to fine tune skill sets and acquire (and retain) practical knowledge by doing, rather than just memorizing.
- Create activities that allow learners to delve into specific tasks, such as simulations, that enable them to store the information in their long term memory through repetition and experience.

<https://elearningindustry.com/9-tips-apply-adult-learning-theory-to-learning>



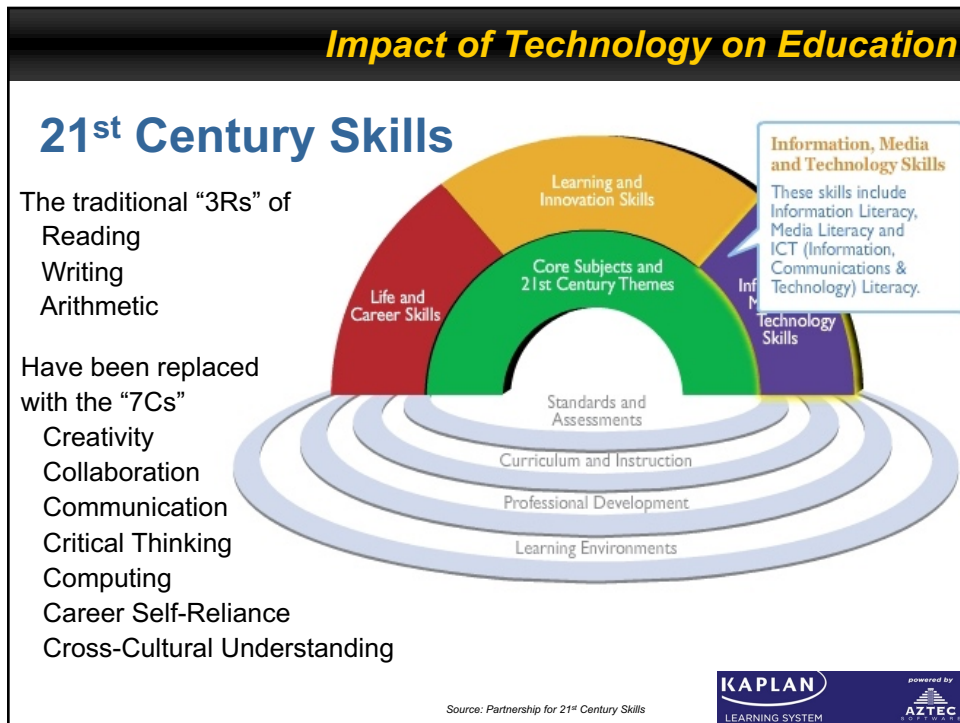
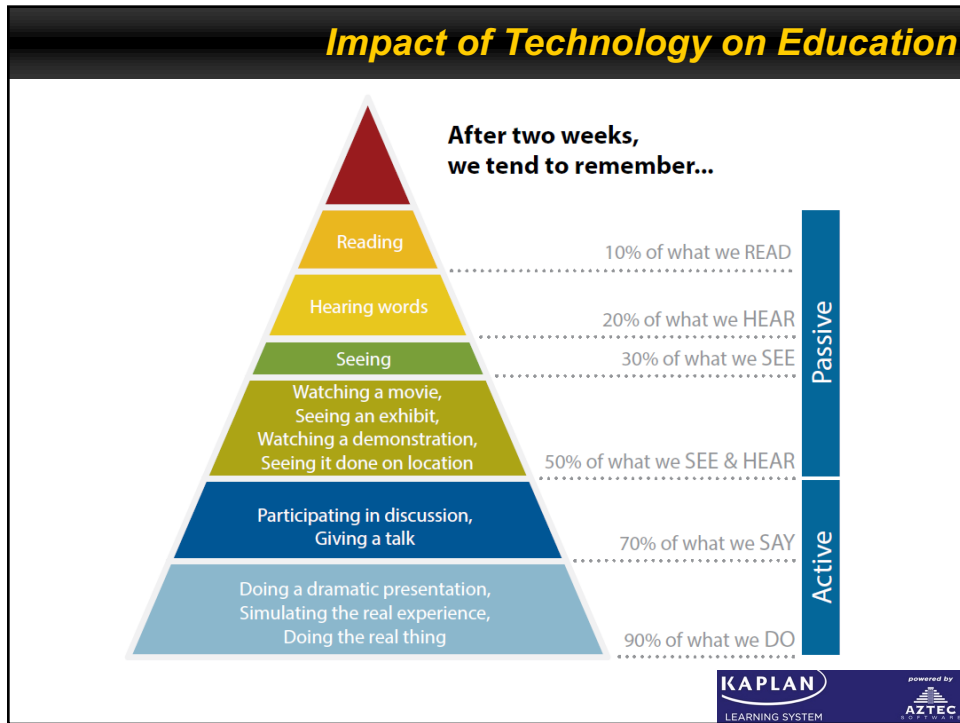
Assumptions of Adult Learners

Mackeracher's 7 Assumptions of Adult Learners

1. Adults can and do learn throughout their lifetimes.
2. Adults are not mature children, nor are children immature adults.
3. Adults change over time.
4. Adults accumulate experiences and prior knowledge over their lifetime; they older they grow, the more past experiences and prior learning they bring to bear on current learning.
5. The role of time in the life of an adult has important implications for the learning process.
6. Adults bring to the learning process an established sense of self and an inclination to protect this self from perceived threats that might arise in learning interactions.
7. Both self-directedness and relatedness to others contribute to how adults prefer to learn.

Mackeracher, 2004

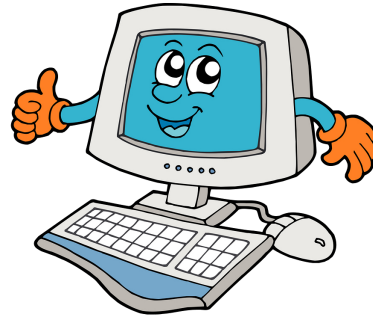




Curriculum and Lesson Plans

Computer Literacy

The ability to use a computer and its software to accomplish practical tasks.



Curriculum and Lesson Plans

Technology/Digital Literacy

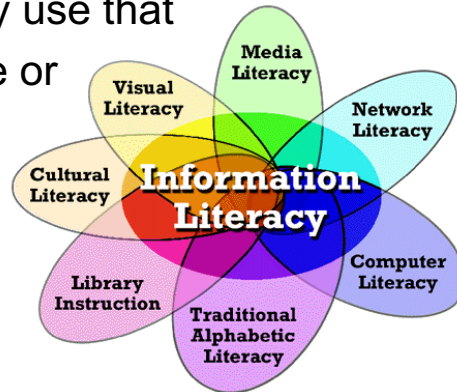
The ability to use new media, such as the Internet, to access and communicate information effectively.



Curriculum and Lesson Plans

Information Literacy

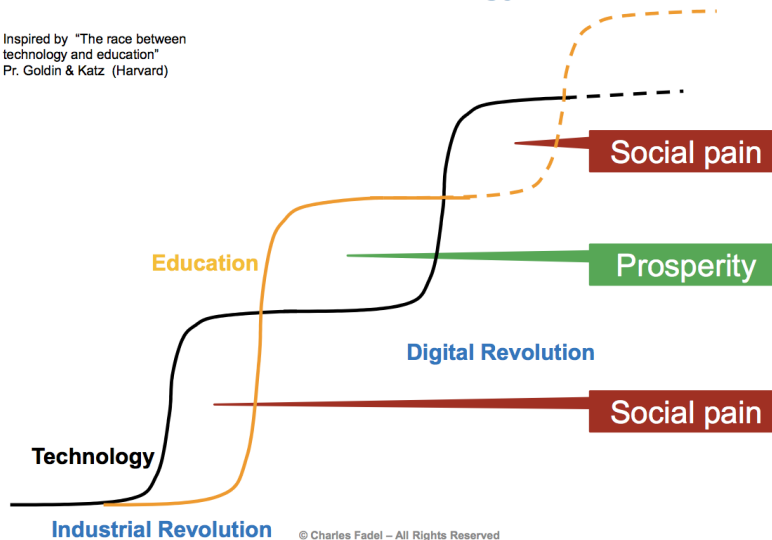
The ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.



Technology Trends

The Race between Technology and Education

Inspired by "The race between technology and education"
Pr. Goldin & Katz (Harvard)



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<https://tanczosilbor.files.wordpress.com/2013/05/theracebetweentechandedu.png>



Technology Standards

ISTE Standards in the U.S.

ADOPTED

State department of education has formally adopted the ISTE Standards for Students as part of its academic standards or curriculum framework.

ADAPTED

State department of education has modified the ISTE Standards for Students or used them as a guide to help develop statewide academic standards or curriculum framework.

REFERENCED

State department of education cites the ISTE Standards for Students as a support reference in its technology plan or on its website.

*Not shown to scale

Developed with support from Galvanize Labs, Inc.

<http://www.iste.org/>

powered by
AZTEC

Technology Standards

ISTE Standards for Students

International Society for Technology in Education

ISTE Standards Students

- 1. Creativity and innovation**

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

 - a. Apply existing knowledge to generate new ideas, products, or processes
 - b. Create original works as a means of personal or group expression
 - c. Use media and simulations to explore complex systems and issues
 - d. Identify trends and forecast possibilities
- 2. Communication and collaboration**

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

 - a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
 - b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats
 - c. Develop cultural understanding and global awareness by engaging with learners of other cultures
 - d. Contribute to project teams to produce original works or solve problems
- 3. Research and information fluency**

Students apply digital tools to gather, evaluate, and use information.

 - a. Plan strategies to guide inquiry
 - b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
 - c. Evaluate and solve information sources and digital tools based on the appropriateness to specific tasks
 - d. Process data and report results
- 4. Critical thinking, problem solving, and decision making**

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

 - a. Identify and define authentic problems and significant questions for investigation
 - b. Plan and manage activities to develop a solution or complete a project
 - c. Collect and analyze data to identify solutions and/or make informed decisions
 - d. Use multiple processes and diverse perspectives to explore alternative solutions
- 5. Digital citizenship**

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

 - a. Advocate and practice safe, legal, and responsible use of information and technology
 - b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity
 - c. Troubleshoot systems and applications
 - d. Transfer current knowledge to learning of new technologies
 - e. Exhibit leadership for digital citizenship
- 6. Technology operations and concepts**

Students demonstrate a sound understanding of technology concepts, systems, and operations.

 - a. Understand and use technology systems
 - b. Select and use applications effectively and productively
 - c. Troubleshoot systems and applications
 - d. Transfer current knowledge to learning of new technologies

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Technology Standards

ISTE Standards for Students

1. Creativity and innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

- a. Apply existing knowledge to generate new ideas, products, or processes
- b. Create original works as a means of personal or group expression
- c. Use models and simulations to explore complex systems and issues
- d. Identify trends and forecast possibilities



Technology Standards

ISTE Standards for Students

2. Communication and collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

- a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
- b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats
- c. Develop cultural understanding and global awareness by engaging with learners of other cultures
- d. Contribute to project teams to produce original works or solve problems



Technology Standards

ISTE Standards for Students

3. Research and information fluency

Students apply digital tools to gather, evaluate, and use information.

- a. Plan strategies to guide inquiry
- b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
- c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks
- d. Process data and report results

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Technology Standards

ISTE Standards for Students

4. Critical thinking, problem solving, and decision making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

- a. Identify and define authentic problems and significant questions for investigation
- b. Plan and manage activities to develop a solution or complete a project
- c. Collect and analyze data to identify solutions and/or make informed decisions
- d. Use multiple processes and diverse perspectives to explore alternative solutions

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Technology Standards

ISTE Standards for Students

5. Digital citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

- a. Advocate and practice safe, legal, and responsible use of information and technology
- b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity
- c. Demonstrate personal responsibility for lifelong learning
- d. Exhibit leadership for digital citizenship

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Technology Standards

ISTE Standards for Students

6. Technology operations and concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations.


- a. Understand and use technology systems
- b. Select and use applications effectively and productively
- c. Troubleshoot systems and applications
- d. Transfer current knowledge to learning of new technologies

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Technology Standards

ISTE Standards for Teachers




ISTE Standards Teachers

International Society for Technology in Education

Effective teachers model and apply the ISTE Standards for Students (StandardsSM) as they design, implement, and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues, and the community. All teachers should meet the following standards and performance indicators.



- 1. Facilitate and inspire student learning and creativity**
Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.
 - a. Promote, support, and model creative and innovative thinking and inventiveness
 - b. Engage students in exploring real-world issues and solving authentic problems using digital tools and resources
 - c. Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes
 - d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments
- 2. Design and develop digital age learning experiences and assessments**
Teachers design, develop and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the StandardsSM.
- 3. Model digital age work and learning**
Teachers exhibit knowledge, skills, and work practices representative of an innovative professional in a global and digital society.
 - a. Demonstrate fluency in technology systems and the transfer of content knowledge to new technologies and situations
 - b. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation
- 4. Promote and model digital citizenship and responsibility**
Teachers understand local and global social issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.
 - a. Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources
 - b. Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources
 - c. Promote and model digital citizenship and responsible social interactions related to the use of technology and information
 - d. Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools
- 5. Engage in professional growth and leadership**
Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.
 - a. Participate in local and global learning communities to explore creative applications of technology to improve student learning
 - b. Exhibit leadership by demonstrating a vision of technology-related, participating in shared decision making and community building, and developing the leadership and technology skills of others
 - c. Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
 - d. Contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

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Technology Standards

ISTE Standards for Teachers

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

Technology Standards

ISTE Standards for Administrators



1. Visionary leadership
Educational Administrators inspire and lead development and implementation of a shared vision for comprehensive integration of technology to promote excellence and support transformation throughout the organization.

- a. Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders
- b. Engage in an ongoing process to develop, implement, and communicate technology-related strategic plans aligned with a shared vision
- c. Advocate on local, state and national levels for policies, programs, and funding to support implementation of a technology-infused vision and strategic plan

2. Digital age learning culture
Educational Administrators create, promote, and sustain a dynamic, digital age learning culture that provides a rigorous, relevant, and engaging education for all students.

- a. Ensure instructional innovation focused on continuous improvement of digital age learning
- b. Model and promote the frequent and effective use of technology for learning
- c. Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners

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3. Excellence in professional practice
Educational Administrators promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.

- a. Allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration
- b. Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty, and staff in the study and use of technology
- c. Promote and model effective communication and collaboration among stakeholders using digital-age tools
- d. Stay abreast of educational research and emerging trends regarding effective use of technology and encourage exploration of new technologies for their potential to improve student learning

4. Systemic improvement
Educational Administrators provide digital age leadership and management to continuously improve the organization through the effective use of information and technology resources.

- a. Lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources
- b. Collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning
- c. Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals
- d. Establish and leverage strategic partnerships to support systemic improvement
- e. Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning

5. Digital citizenship
Educational Administrators model and facilitate understanding of social, ethical and legal issues and responsibilities related to an evolving digital culture.

- a. Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners
- b. Promote, model and establish policies for safe, legal, and ethical use of digital information and technology
- c. Promote and model responsible interactions related to the use of technology and information
- d. Model and facilitate the development of a shared cultural understanding and involvement in global issues through the use of contemporary communication and collaboration tools

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Technology Standards

ISTE Standards for Administrators

1. Visionary Leadership
2. Digital Age Learning Culture
3. Excellence in Professional Practice
4. Systemic Improvement
5. Digital Citizenship

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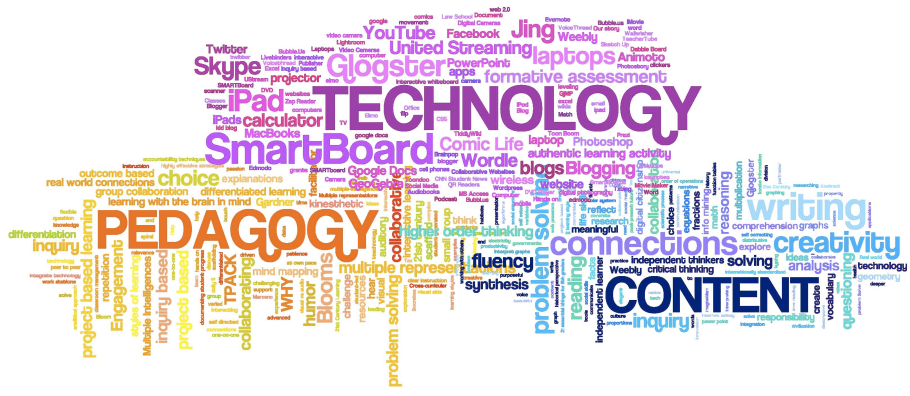


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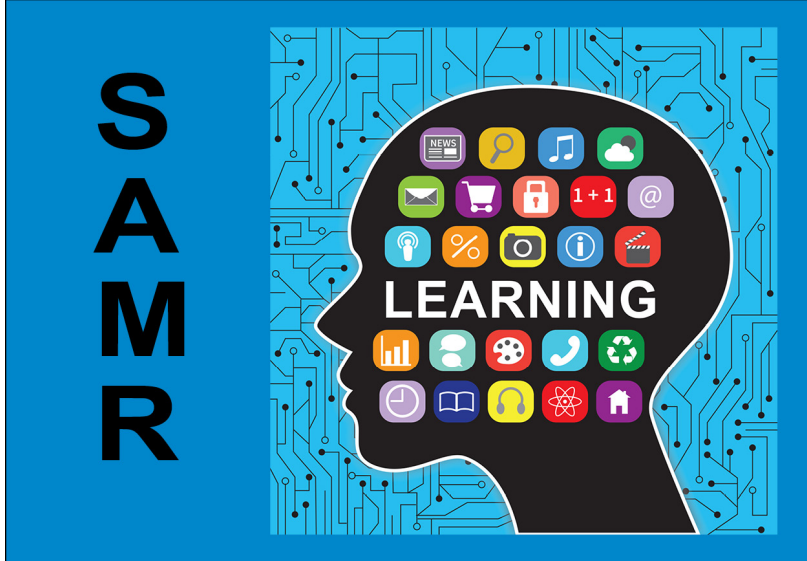


Models of Implementation

So . . . What do I do?



Models of Implementation



Models of Implementation

SAMR Model

The diagram illustrates the SAMR model using Starbucks coffee as an analogy. It shows four Starbucks cups in a row, each with a different Starbucks logo and a yellow star next to it. The cups are labeled from left to right: 'coffee' (Substitution), 'latte' (Augmentation), 'caramel macchiato' (Modification), and 'pumpkin spice' (Redefinition). Above each cup is a large letter in a green circle: 'S', 'A', 'M', and 'R'. Below each letter is a brief description of the model level.

S Technology acts as a direct tool substitute, with no functional change.

A Technology acts as a direct tool substitute, with functional improvement.

M Technology allows for significant task redesign.

R Technology allows for the creation of new tasks.

coffee latte caramel macchiato pumpkin spice

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Models of Implementation

SAMR Model: Substitution

Substitution: Same Task, New Technology

At the **Substitution Level**, you are substituting a cup of coffee that we could make at home or school with a cup of coffee from Starbucks. It's still coffee: there's no real change.

- ✓ Reading a book on the **iPad** would be considered substitution, as you are simply substituting a handheld book for a digital book.
- ✓ Taking notes or writing an essay using **Google Docs** or **Evernote** instead of using paper and pencil are other examples of substitution.

Although these activities engage students and enhance learning, the level of tech integration is low: teachers are just substituting technology for things you could do without technology.

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Models of Implementation

SAMR Model: Substitution

LESSON 2

GEOMETRY

Triangles

The Properties of Triangles

A triangle is a closed three-sided plane figure. From the definition, we can deduce other properties. Since a triangle has three sides, it must also have three interior angles and three vertices.

A triangle is named by writing its vertices in any order. The triangle shown at right could be named $\triangle DEF$. Its sides are DE , EF , and DF .

Triangles can be classified by the lengths of their sides and by the measures of their angles. In the figure below, sides with the same number of marks are equal.

Classified by Side Lengths

equilateral triangle
All sides are equal in length. Note that the angles also are equal.

isosceles triangle
Exactly two sides are equal in length. Note that the two angles opposite these sides are equal.

scalene triangle
No sides are equal in length, and no angles are equal.

Classified by Angle Measures

right triangle
One angle measures 90° .

acute triangle
All angles measure less than 90° .

obtuse triangle
One angle is greater than 90° .

Each triangle can be classified in two ways.

Example 1: What kind of triangle is $\triangle PQR$?

- Classify by its sides. Two sides have the same length, so $\triangle PQR$ is an isosceles triangle.
- Classify by its angles. $\angle P$ is a right angle, so $\triangle PQR$ is a right triangle.

$\triangle PQR$ is a right isosceles triangle.

Key Ideas

- Triangles are named by their vertices.
- They are classified in two ways: by their side lengths and by their angle measures.
- The sum of the interior angles of any triangle is 180° .

GED® TEST TIP
Classify triangles by their properties, not by how they look. For example, the triangle in Example 1 might not immediately look like a right triangle because the right angle is at the top.

390 K Geometry

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Models of Implementation

SAMR Model: Augmentation

Augmentation: Improve the Task with New Features

At the **Augmentation Level**, you are taking regular coffee and making it better by adding ice, or a little cinnamon on top. We didn't change the coffee, but it tastes better because we augmented and enhanced it with additional ingredients.

- ✓ With a digital book, students can **click on a word and get a definition**, synonym, or a link that may take them to more information about that subject area.
- ✓ While writing, students can **highlight a word, spellcheck, customize and format font**.
- ✓ **Skitch/Evernote** or **PicCollage** are apps that allow you to augment learning by annotating images. Students can find objects in the classroom, take pictures, then label their work, whether it be math, word work, or science.
- ✓ Using a **Video App** students could complete a **fluency boot camp**, where they would record themselves reading a passage, and play it back checking for fluency and expression.

Although these examples enhance learning, the tasks do not change.

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Models of Implementation

SAMR Model: Augmentation

The sum of the measures of the interior angles of any triangle is 180° . We can use this fact to solve for a missing angle.

Example 2: In $\triangle ABC$, $\angle A$ measures 55° and $\angle B$ measures 100° . What is the measure of $\angle C$?
Write an equation and solve. $55^\circ + 100^\circ + \angle C = 180^\circ$
 $155^\circ + \angle C = 180^\circ$
 $\angle C = 25^\circ$

The measure of $\angle C$ is 25° .

PRACTICE 2

A. Classify each triangle in two ways.

-
-
-

B. Find the measure of the unknown angle in each triangle.

-
-
-

C. Choose the one best answer to each question.

Questions 2 and 3 refer to the following figure:

2. What kind of triangle is $\triangle ABC$?
A. isosceles
B. acute
C. right
D. obtuse

3. One angle in a scalene triangle measures 38° , and another angle measures 50° . What is the measure of the third angle?
A. 30°
B. 50°
C. 80°
D. 121°

7. If $\angle DAB$ measures 115° and $\angle DCB$ measures 95° , what is the length of side AC in centimeters? (Hint: Use the facts in the problem to find $m\angle DAC$ and $m\angle BCA$.)
A. 6
B. 8
C. 14
D. 22

Mathematical Reasoning K 391

Video and Audio Instruction

Models of Implementation

SAMR Model: Modification

Modification: Changing the Task

At the **Modification Level**, we add some bells and whistles to the augmented coffee. We add a little whipped cream, caramel, and some special flavoring, and we now have a salted caramel mocha with a fancy design.

- ✓ At this level, technology allows for significant task redesign, like collaborating in real-time using **Google Drive**.
- ✓ Students are motivated to write for their peers and engage with a global network.
- ✓ To use technology to modify learning, we add multimedia through video, sound and audio.
- ✓ Students could create a soundtrack in **Garageband** for a multimedia presentation.
- ✓ Students could use **iMovie App** to create **iMovie Book Trailers**, or digital stories using the **Videolicious App**.

Modification involves changing the task, and personalizing the project.

<https://www.edsurge.com/n/2015-02-06-a-guide-for-bringing-the-samr-model-to-igads>

Models of Implementation

SAMR Model: Modification

LESSON 2

INTERPRETING NONFICTION AND INFORMATIONAL TEXT

Restatement and Summary

Restating Ideas
Restating an idea means putting it into your own words. For example, a friend may tell you that a movie wasn't worth the eight dollars she spent on it. You might then tell a co-worker that your friend said the movie was no good.

As you read the passage below, restate in your mind what you are reading.

In Canton, Ohio, we take our desserts seriously. There are two local candy stores that receive over 90 percent of the city's candy business: Heggy's and Balducci's. Those who prefer Heggy's won't befriend anyone who buys their sweets at Balducci's.

My family has always patronized Heggy's. At the Heggy's factory, Getty wraps by hand each large chocolate candy in clear cellophane wrap. She's in the back of the store with her father, seated at a table filled with hundreds of chocolates. My favorite chocolates at Heggy's are the dark chocolate truffles, peanut clusters, and caramels.

Heggy's aficionados point out that their candy of choice is a larger size and therefore superior. The rivalry runs deep... at Easter, Hanukkah, Christmas, Thanksgiving, and all occasions. Balducci's loyal followers claim its sweets are sweeter. It's a feud over the best chocolate in town.

How do the people of Canton feel about chocolate candy?
 (1) They consider it a serious health issue.
 (2) They feel it's important enough to take a stand on.

You are correct if you chose (2). The phrase "take our desserts seriously" means that the candy is important to people.

On the *Reading Through Language Arts Test*, the correct answer will not always use the exact words from the passage. You will have to recognize that the idea has been restated.

Summarizing
If you want to tell a friend about a movie you liked, you might summarize what happens in the movie. You certainly will not give all the details—that would take too long. A summary includes only the most important facts and ideas.

Which of the following statements best summarizes the difference in opinion over the candy?
 (1) Some people prefer Heggy's candy because it's bigger, while others prefer Balducci's because it's sweeter.
 (2) People argue whether to buy Heggy's or Balducci's candy for different holidays.

You are correct if you chose (2). The last paragraph sums up the difference in people's opinions. Statement (1) merely states a detail in the last paragraph.

62 **K** Interpreting Nonfiction and Informational Text

Objectives

By the end of this lesson you will be able to:

- Understand the background and setting for Anglo-Saxon verse
- Become familiar with the epic Anglo-Saxon poem, *Beowulf*

Google Drive

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Models of Implementation

SAMR Model: Redefinition

Redefinition: A Whole New Task

Finally, at the **Redefinition Level**, we are ordering a pumpkin spice latte, redefining a regular cup of coffee to something you can only get at Starbucks. We are completing a task that cannot be done without the use of technology. This is the same as higher order thinking levels in Bloom's Taxonomy like analyzing, creating, and evaluation.

- ✓ The students are researching, sharing, collaborating, and connecting with not only their classrooms but with classrooms around the world.
- ✓ They are generating questions, and exploring topics and content using current technologies.
- ✓ Teachers are using virtual book club discussions through **Hangouts**, taking **Virtual Field Trips** to the White House, or talking with experts in the field via **Google Connected Classrooms**.
- ✓ Students are developing mapping, critical thinking, and problem solving skills through **Mystery Skypes**, completing collaborative writing through **Google Docs**, and connecting to the world through social media like **Twitter**.
- ✓ Students are using **iBook Author**, or **Storybook Maker** to create their own digital books are more ways students can reach redefinition levels.

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Models of Implementation

SAMR Model: Redefinition

LESSON 1

ANALYZING NONFICTION AND INFORMATIONAL TEXT

Purpose of Text

When you read *GED® Reasoning through Language Arts* passages, it is important that you comprehend not only what the author is writing about but also the purpose—the reason why he or she is writing this passage. Authors of nonfiction passages have one or more of the following purposes:

- Narrate**—Narrative passages typically recount events chronologically, that is, in the order in which they happened. Examples include a life story and hour-by-hour developments in a news story.
- Inform**—The author seeks to present facts and data to explain a situation, or idea. Examples include news articles, financial statements, and scientific findings.
- Persuade**—The author seeks to change readers' minds, and includes the author's opinions, recommendations, or conclusions. Examples are political speeches, newspaper editorials, and entertainment reviews.
- Entertain**—Authors writing to entertain are trying to amuse or inform their readers. Examples include a humorous memoir or article.

GED® TEST TIP

As you are reading passages on the test, ask yourself, "Why did the author write this story, article, or speech?" That will help you to understand the purpose.

Objectives

How the argument's conclusions.

function

tion of Rivers, Edens, Empires

end tour

Lewis & Clark links

Before Lewis & Clark

More

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To view high-resolution images of exhibit objects >> [Go to Web version of Rivers, Edens, Empires](#)

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Models of Implementation

SAMR Model

Graduate attributes and capabilities

- Intense, learns from errors & experience
- remains calm, thinks strategically
- transparent & honest, gives credit
- persevering

Quadrants:

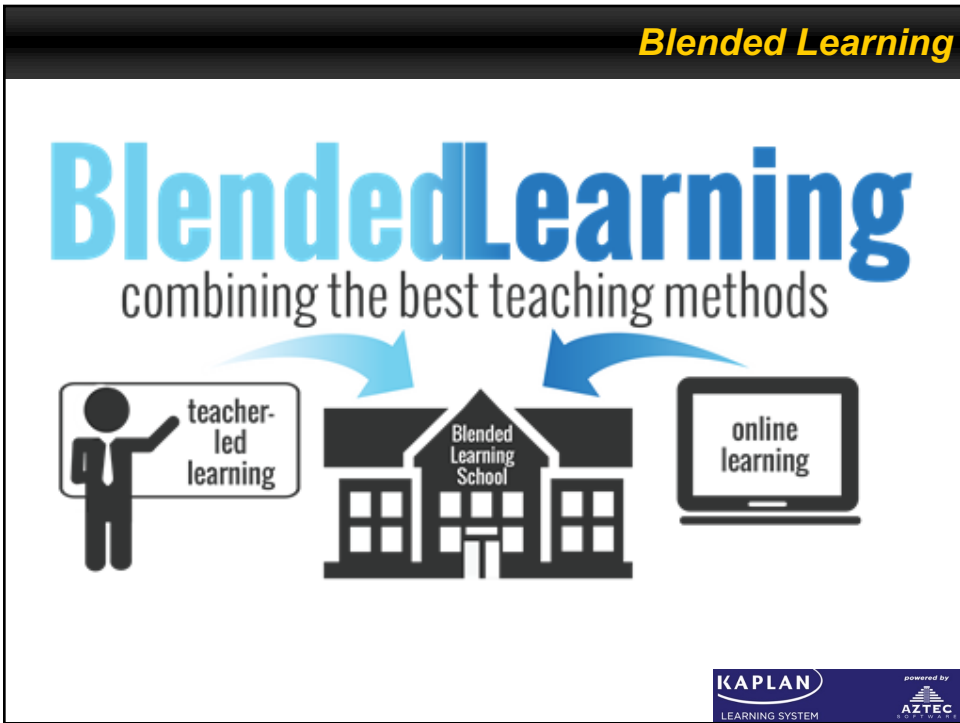
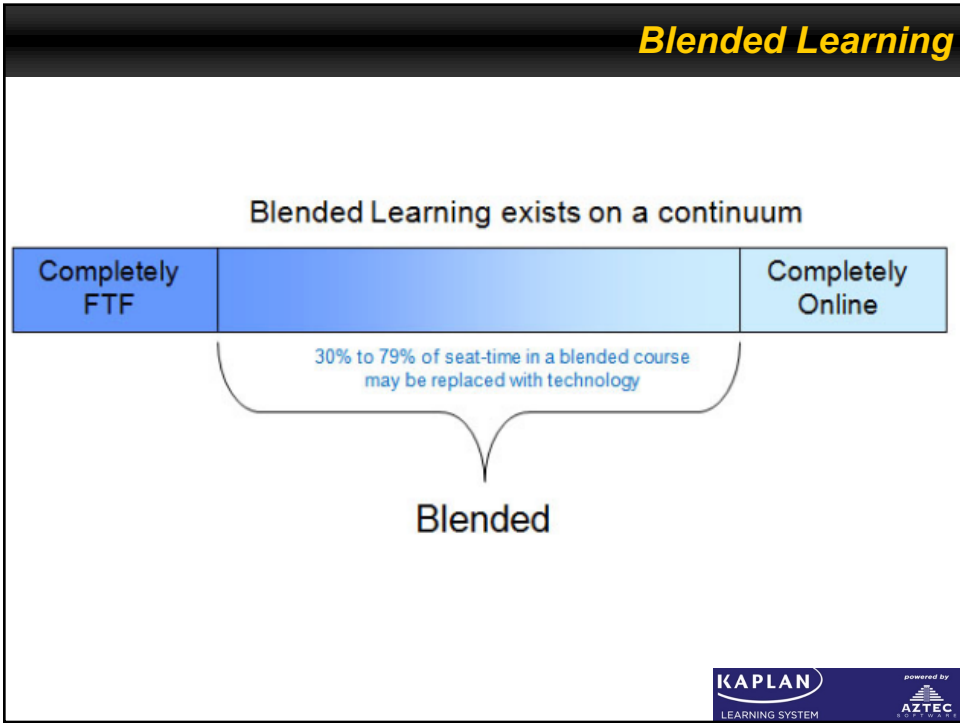
- Create:** good communicator, energy, passion & enthusiasm, understands strengths & limitations
- Evaluate:** work network, post, judge, justify, verify, debate, compare, conference, report, news item, hypothesis, survey, Recommendation, Summary, Self-evaluator
- Analyze:** contrast, distinguish, resource, compare, deconstruct, identify, analyze, interview, Action Verbs, surveying, charting, spreadsheeting, matching, summarizing, diagramming
- Apply:** outline, survey, differentiate, deconstruct, identify, analyze, interview, Action Verbs, creating advertisement, building questionnaire

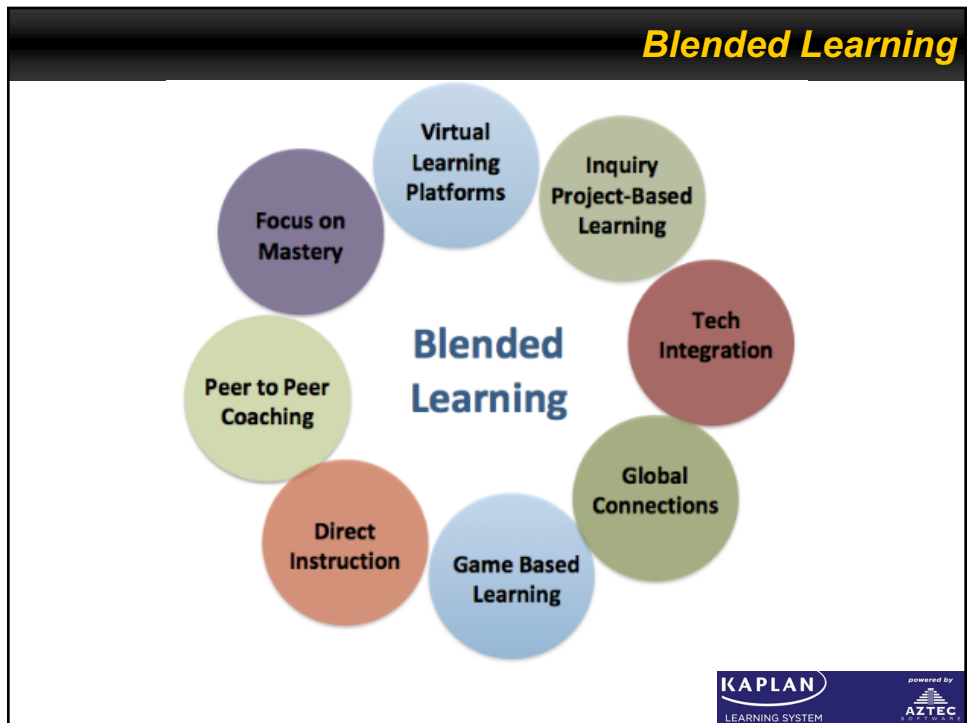
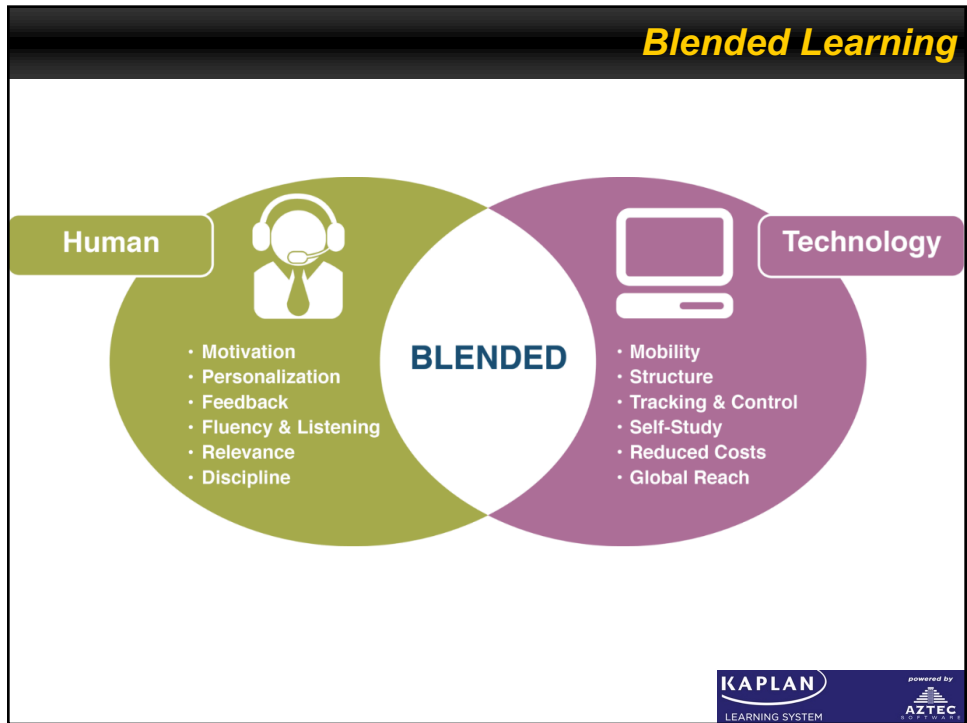
Implementation Levels:

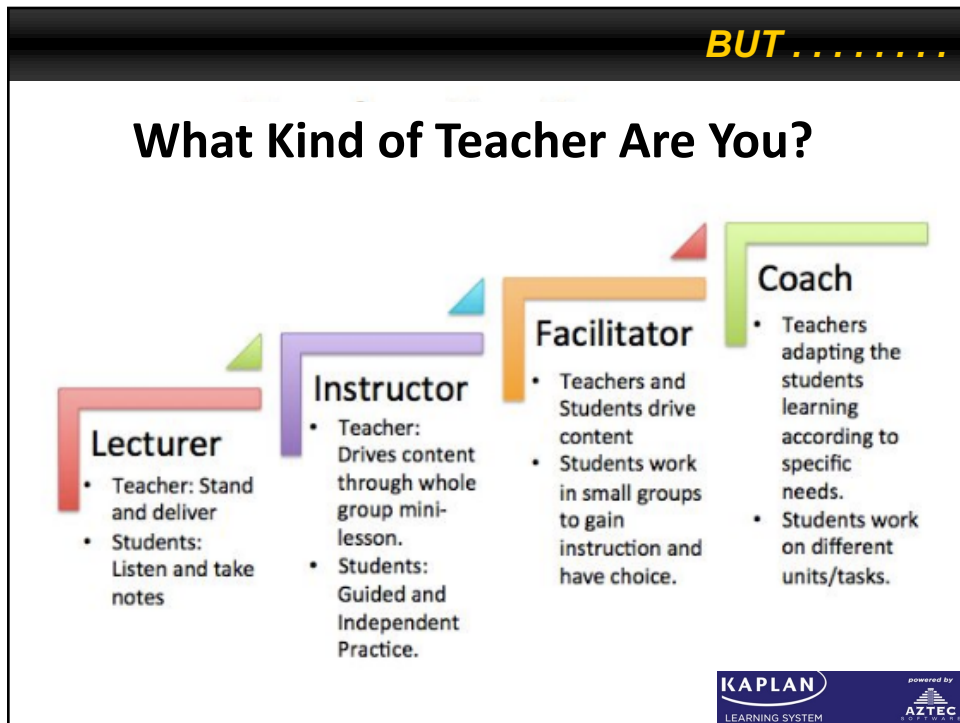
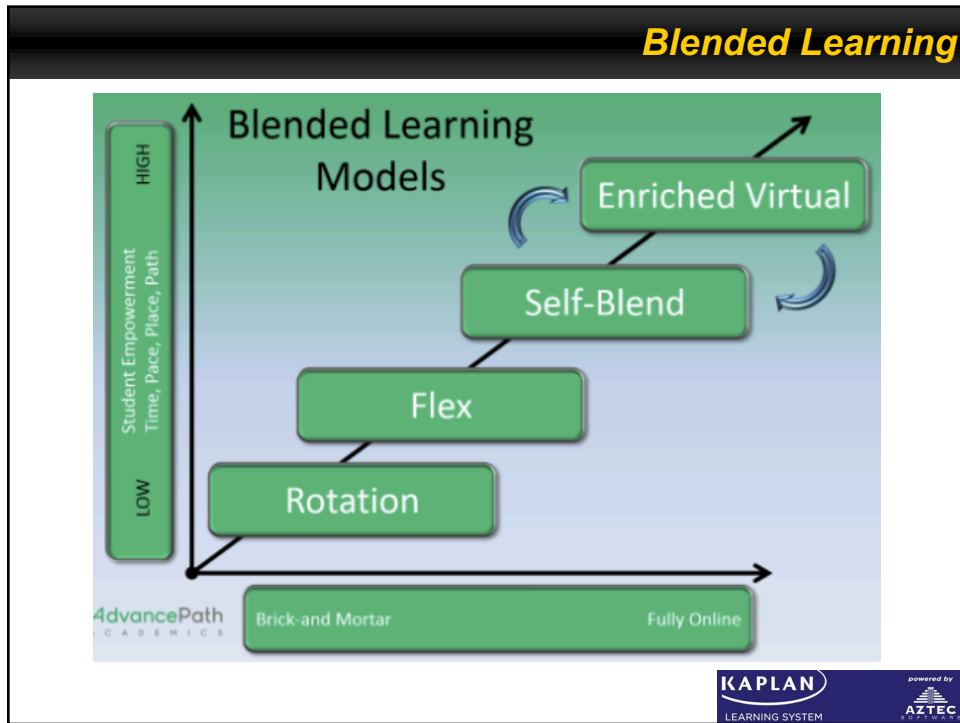
- Redefinition:** New tasks previously impossible
- Modification:** Significant task redesign
- Substitution:** Substitute and no functional change
- Augmentation:** Substitute with functional improvement

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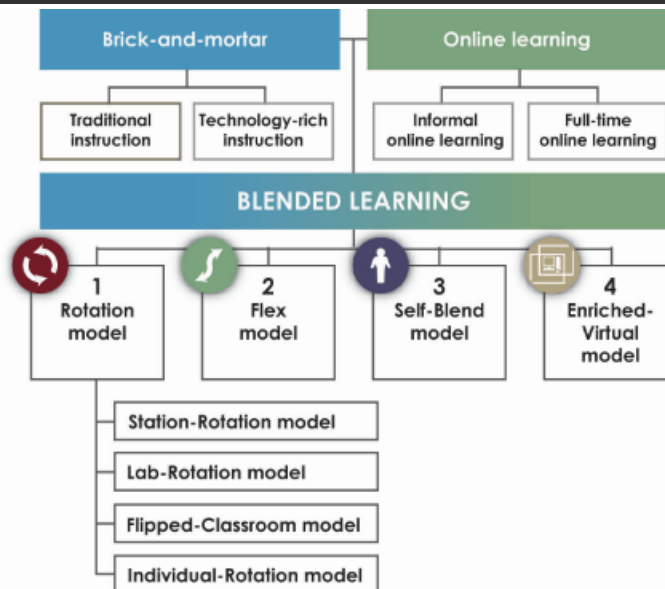


Benefits of Blended Learning

- Personalized Learning
- Flexible Learning
- Convenient
- Addresses Students' needs
- Boosts Confidence
- Can be Strategically Aligned with Mission and Goals of Institution
- Addresses Institutional and Faculty Needs



Blended Learning



Why Implement Blended Learning

- Blended learning allows teachers and schools to **address a variety of learning styles** through instructional methods. (Wiffin, 2002)
- Blended learning practices **increase student motivation.** (Berson, 1996; Lipscomb, 2003; Pye & Sullivan, 2001; Scheidet, 2003; Wellman & Flores, 2002)
- Blended learning allows for **more personalized instruction.**
- Blended learning provides opportunities for teachers to use online curriculum for **basic information and for extensions/review** and class time for higher order thinking activities.
- Blended learning frequently **provides a higher level of interaction** than commonly experienced in face-to-face courses. (Dziuban, Hartman, & Moskal, 2004; Waddoups & Howell, 2002; Wingard, 2004)

Blended Learning

Lets Discuss!



Models of Blended Learning

1. Face-to-Face Driver

- Closest to a traditional school structure.
- Online instruction is decided case-by-case.
- Only certain students in a given class will participate in any form of blended learning.
- Allows students who are struggling, or working above their grade level, to progress at their own pace using technology in the classroom.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

2A. Station / Classroom / In-Class Rotation

- Within a given course or subject, students rotate on a fixed schedule or at the teacher's discretion, among classroom-based learning modalities.
- Other stations might include activities such as small-group or full-class instruction, group projects, individual tutoring, and pencil-and-paper assignments.
- Some implementations involve the entire class rotating among activities together, others divide the class into small-group or one-by-one rotations.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

2B. Lab Rotation:

- Students rotate between F2F and online within the same course.
- Students rotate between different stations on a fixed schedule – either working online or spending F2F time with the teacher.
- 80% of elementary schools in California that use blended learning follow the rotation model – because many are already set up to have students rotate between stations.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

2C. Flipped Classroom:

- Students rotate on a fixed schedule between F2F teacher-guided practice (or projects) on campus during the standard school day and online delivery of content and instruction of the same subject from a remote location after school.
- Primary delivery of content and instruction is online.
- Model includes some element of student control over time, place, path, and/or pace.
- Class time is often spent demonstrating competency of material learned online.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

2D. Individual Rotation

- Single course or subject focus (e.g., an online math course).
- Students rotate on an individually customized, fixed schedule among learning modalities, at least one of which is online learning.
- An algorithm, or teacher, sets individual student schedules.
- Model differs from the other Rotation models because students do not necessarily rotate to each available station or modality.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

3. Flex Model:

- Most content is online with tutoring in a f2f classroom
- Ideal for schools supporting large number of non-traditional or at-risk students.
- Material is primarily delivered online.
- Teachers are in the room to provide on-site support as needed.
- Learning is primarily self-guided.
- Students independently learn and practice new concepts in a digital environment.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

4. Self-Blend Model:

- Students are online after hours on their own initiative.
- Popular in Adult Schools.
- Gives students the opportunity to take classes beyond what is already offered at their school.
- Students opt to supplement their learning through online courses offered remotely.
- Students must be highly self-motivated.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

5. Online Lab Model:

- Students in computer lab with mentor during school day and online teacher.
- Viable option for helping student's complete courses, including those not offered at the specific school.
- Students learn entirely online, but travel to a dedicated computer lab to complete their coursework/assessments.
- Proctors supervise the lab, but are not trained teachers.
- Allows schools to offer courses for which they have no teacher or not enough teachers.
- Allows students to self-pace their work (in a subject area that suits them) without affecting other students.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Models of Blended Learning

6. Online Driver:

- All content is online.
- Student proceed at own pace.
- Students work remotely.
- Material is primarily delivered via online platform.
- F2F check-ins are optional.
- Students may chat with teachers online if they have questions.
- Ideal for students who need more flexibility and independence in their daily schedules.

Adapted from: <http://www.dreambox.com/blended-learning#sthash.eKSU49ty.dpuf>



Activity!

- Please divide into 6 groups
- Each group will review one model of Blended Learning
- Then report out on practical methods of implementation in your schools



Synchronous & Asynchronous Classes

Synchronous & Asynchronous Classes

<http://www.elearners.com/online-education-resources/degrees-and-programs/synchronous-vs-asynchronous-classes/>

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Research: Blended Learning

How To Design A Blended Learning Course

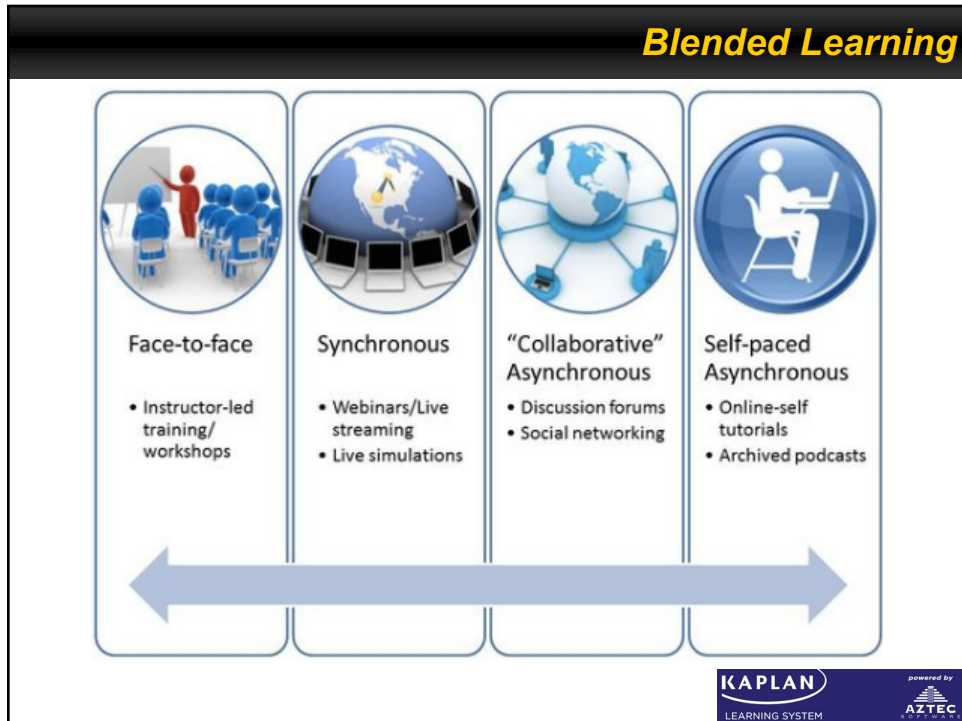
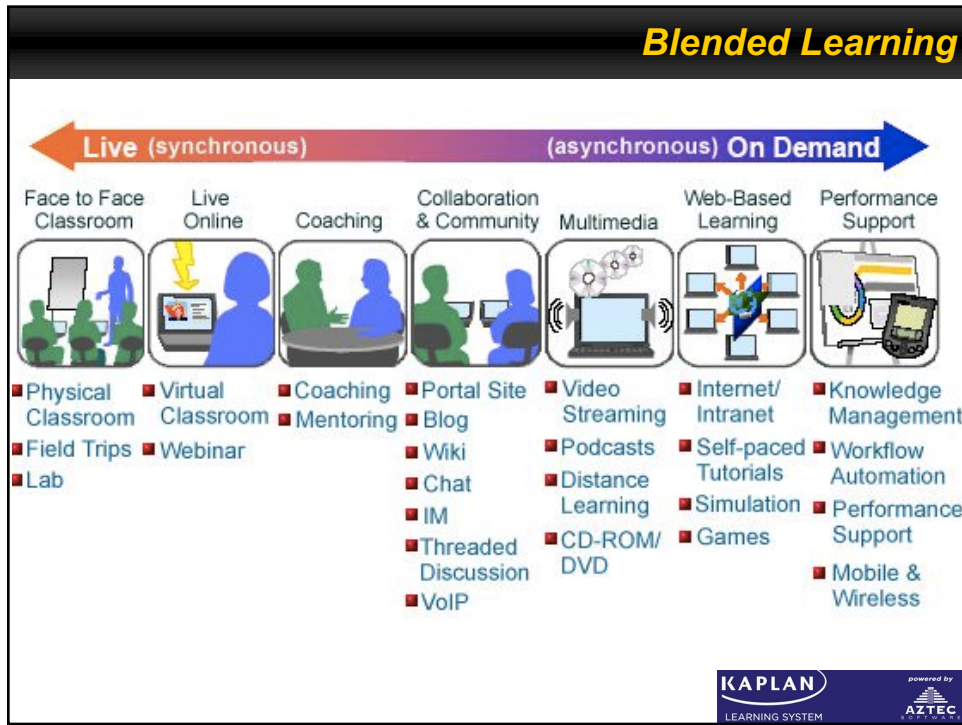
SYNCHRONOUS learning strategy (*group*)

AND

ASYNCHRONOUS learning strategy (*individual*)

<http://elearningindustry.com/7-tips-create-effective-blended-elearning-strategy>

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The Asynchronous Class

1 What is Asynchronous Learning?

Asynchronous learning allows you to take online courses on your own schedule.

Instructors provide materials, lectures, tests, and assignments that can be accessed at any time.

Students may be given a time frame – usually a one week window – during which they need to connect at least once or twice.

Overall, students are free to contribute whenever they choose.



E-mail

Virtual Libraries



Discussion Boards

Social Networking



<http://www.elearners.com/online-education-resources/degrees-and-programs/synchronous-vs-asynchronous-classes/>

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The Asynchronous Class

- ✓ **Virtual Libraries/Repositories of Documents, Presentations, Graphics, Audio Files, and Video:** Many online courses will provide instructional materials such as PDFs, PPT presentations, slides, illustrative graphics, video snippets, audio files, and even full-length movies.
- ✓ **E-Mail:** E-mail is a great tool for asking questions, keeping in touch, and receiving materials, updates, reminders, and even assessments.
- ✓ **Discussion Boards:** The discussion board is a great way to respond to questions and to share documents and links. It's also a good place to ask questions and to clear up ambiguities.
- ✓ **Social Networking:** Social networking programs that are often incorporated include blogs, wikis, Facebook, Orkut, Bebo, Twitter, Flickr, Youtube, Youstream, and more.
- ✓ **Wikis and Collaborative Documents:** Collaborative documents allow students to edit each other's work and to collaborate.
- ✓ **e-Portfolios:** Demonstrate skills and knowledge of a special topic.
- ✓ **DVD/CD-ROM:** These can be real life-savers where there is slow, limited, or expensive Internet connectivity.

<http://www.elearners.com/online-education-resources/degrees-and-programs/synchronous-vs-asynchronous-classes/>

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The Synchronous Class

Chat



Telephone

Podcasts



Video Conferencing

2 What is Synchronous Learning?

Synchronous online classes are those that require students and instructors to be online at the same time.

Lectures, discussions, and presentations occur at a specific hour.

All students must be online at that specific hour in order to participate.

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The Synchronous Class

- ✓ **Chat (text only):** Chat rooms allow multiple users to log in and interact.
- ✓ **Voice (telephone or voice-over IP):** The purpose is to have a conference call with your instructor and/or fellow students.
- ✓ **Video conferencing:** Video conferences can, in theory, require all the participants to have their webcams running.
- ✓ **Web conferencing:** Web conferences tend to be more interactive, and you'll probably be asked to respond to questions (survey, poll, questionnaire), which will give you a chance to interact. Web conferences usually incorporate chat and they often have a question and answer session at the end.
- ✓ **Internet radio/podcasts:** The nice thing about Internet radio / streaming audio is that students can send chat messages while the event is happening.
- ✓ **Virtual worlds:** Educational "islands" in virtual worlds like Second Life are places for students to meet "live" and to interact. They're ideal for learning languages because it's possible to speak with each other through headsets and VoIP.

<http://www.elearners.com/online-education-resources/degrees-and-programs/synchronous-vs-asynchronous-classes/>

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Research: Designing a Blended Learning Course

1. Clearly identify the course's objectives and goals.

You should ask yourself:

- ✓ What skills should the learners develop during the course?
- ✓ What information must be included in the course's syllabus?
- ✓ What learning tools and instructional design models should be used in order to deliver this information?

Objectives are a guide to move forward through the curriculum and provide the opportunity to see the blended learning course is headed and what points need to be covered along the way.

<http://elearningindustry.com/7-tips-create-effective-blended-elearning-strategy>



Research: Designing a Blended Learning Course

2. Create a blended learning course outline and syllabus to keep learners motivated and on-track.

- Learners can use the outline to stay on track during the course.
- Facilitators can use the outline to ensure the course is progressing at the desired pace.
- Be sure to
 - Include key pieces of information, such as the learning objectives
 - Clearly state the required papers/tests/presentations that need to be submitted
 - Identify the deadlines that learners must meet
 - Specify what will be expected of the learner in terms of participation and attendance
 - State how the content will be delivered (highlighting the primary instructional methods and tools)
 - List any materials that will be required

<http://elearningindustry.com/7-tips-create-effective-blended-elearning-strategy>



Research: Designing a Blended Learning Course

3. Determine the blended learning course's level of interactivity.

- How much learning will take place via an online course, face-to-face, or self-paced learning activities?
- It could be challenging to decide which tools/methods are ideally suited for a particular module or topic.
- Assess each module or topic to determine how to present the content more effectively and whether the core ideas can be explored better through synchronous or asynchronous communication and activities.

<http://elearningindustry.com/7-tips-create-effective-blended-elearning-strategy>



Research: Designing a Blended Learning Course

4. Integrate group collaborative activities.

- Group collaboration is an extremely important component of a blended learning strategy.
- Learners gain the ability to share their knowledge with others, and to benefit from the skill sets of their peers.
- Online tools and applications, such as chat rooms, allow learners to discuss a particular problem or question that is posed, or share opinions and thoughts via social media platforms.

<http://elearningindustry.com/7-tips-create-effective-blended-elearning-strategy>



Research: Designing a Blended Learning Course

5. Develop communication and feedback guidelines.

- Learners must have the ability to communicate with the facilitator or instructor if they have a question or concern, **AND** know when they can expect to receive a reply (i.e. by email within 24 hours).
- A solid support system must be in place without tying the instructor to the virtual classroom round-the-clock.
- Determine how to gather feedback from the learners. Surveys, live chats, or some other means of gathering input is important.

<http://elearningindustry.com/7-tips-create-effective-blended-elearning-strategy>



Research: Designing a Blended Learning Course

6. Compile a list of resources and references.

- If some, if not all, of your blended learning strategy is online, invaluable resources and references are available to learners.
- Include links to reference sites and articles that enable learners to further explore the topic and learn even more.
- Provide a list of relevant articles that ties the course plan into news stories that allow learners to relate to the subject matter.
- Contextualization becomes easier when accessing online resources and reference tools.

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Research: Designing a Blended Learning Course

7. Create an effective assessment plan.

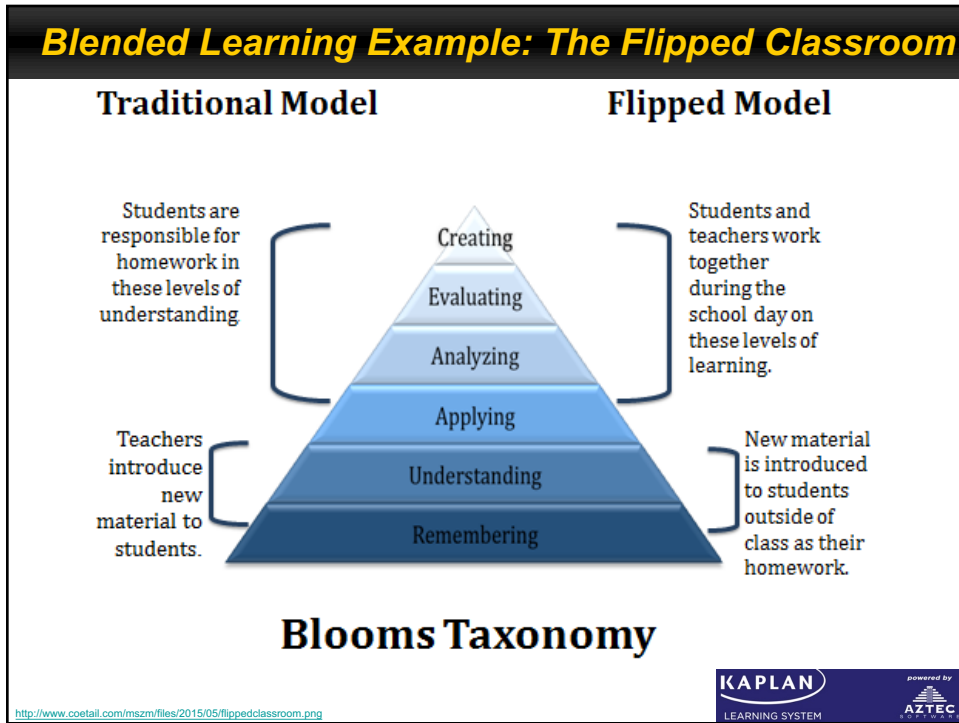
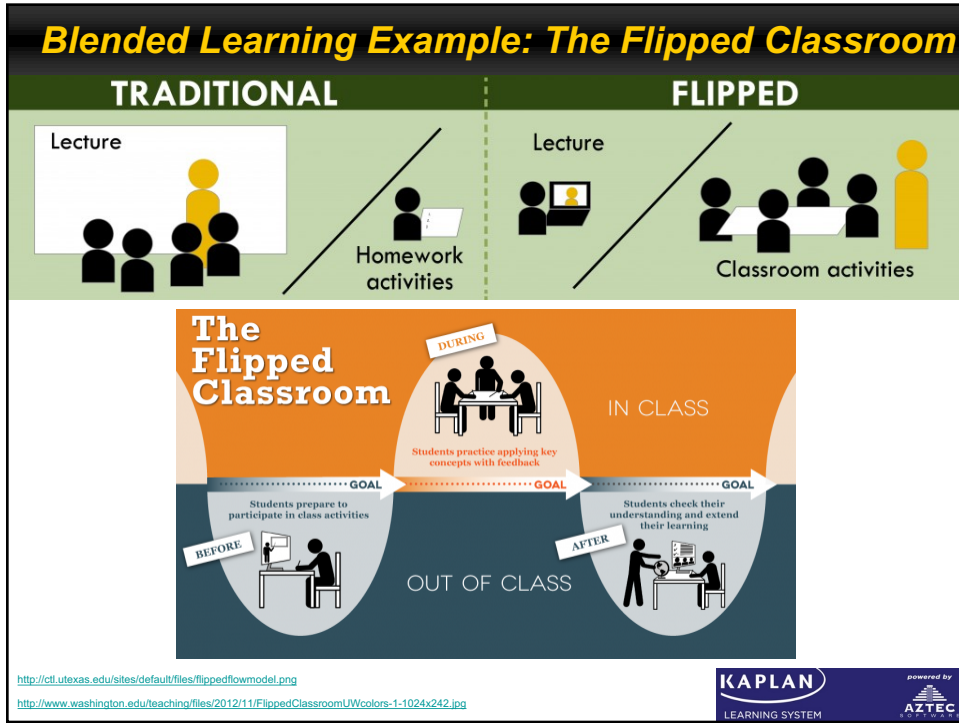
- How will you check the progress of your learners?
 - Will you ask them to complete a quiz at the end of each module?
 - Will you have them summarize the content after they have completed a self-study course, or engage in a lively discussion with their peers via online forums?
- Assessments can give learners the chance to pinpoint personal areas of improvement and to utilize the knowledge and skills they have learned to boost retention.
- An assessment policy should be in place that ensures individual mastery of content. Many schools require assessments to be taken in proctored settings.

<http://elearningindustry.com/7-tips-create-effective-blended-elearning-strategy>

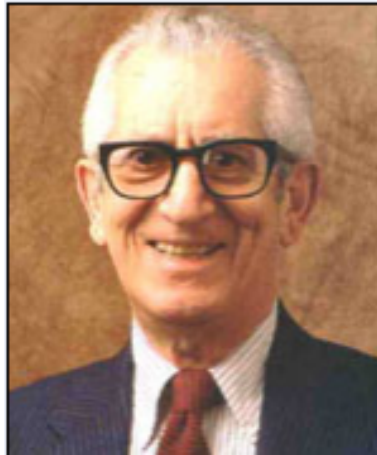


Blended Learning Example: The Flipped Classroom





Do You Know This Man?

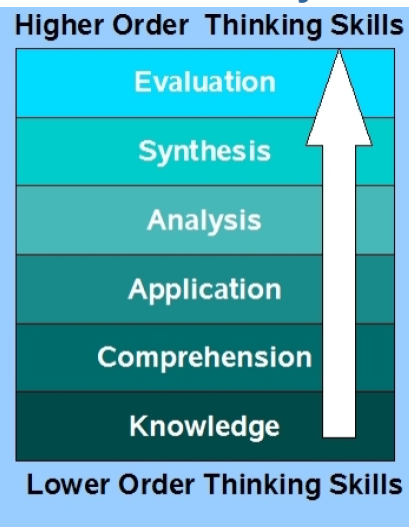


Benjamin Samuel Bloom (1913-1999)



Research: Bloom's Taxonomy

Bloom's Taxonomy - 1956



<http://edorigami.wikispaces.com/file/view/bloom%27s%20Digital%20taxonomy%20v3.01.pdf/65720266/bloom%27s%20Digital%20taxonomy%20v3.01.pdf>



Research: Bloom's Taxonomy

Anderson's Revised Bloom's Taxonomy - 2001

Higher Order Thinking Skills

Creating

Evaluating

Analysing

Applying

Understanding

Remembering

Lower Order Thinking Skills

<http://edorigami.wikispaces.com/file/view/bloom%27s%20Digital%20taxonomy%20v3.01.pdf/65720268/bloom%27s%20Digital%20taxonomy%20v3.01.pdf>

Research: Bloom's Taxonomy

Comparing the Two Taxonomies

HOTS
Higher Order Thinking Skills

Original Taxonomy

Evaluation

Synthesis

Analysis

Application

Comprehension

Knowledge

Revised Taxonomy

Creating

Evaluating

Analysing

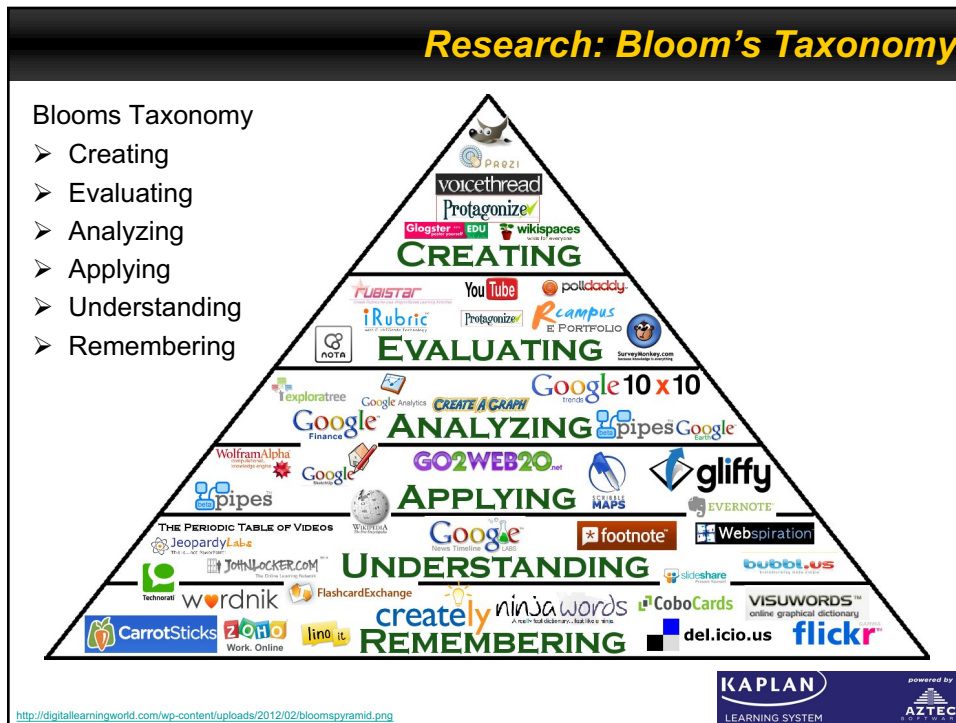
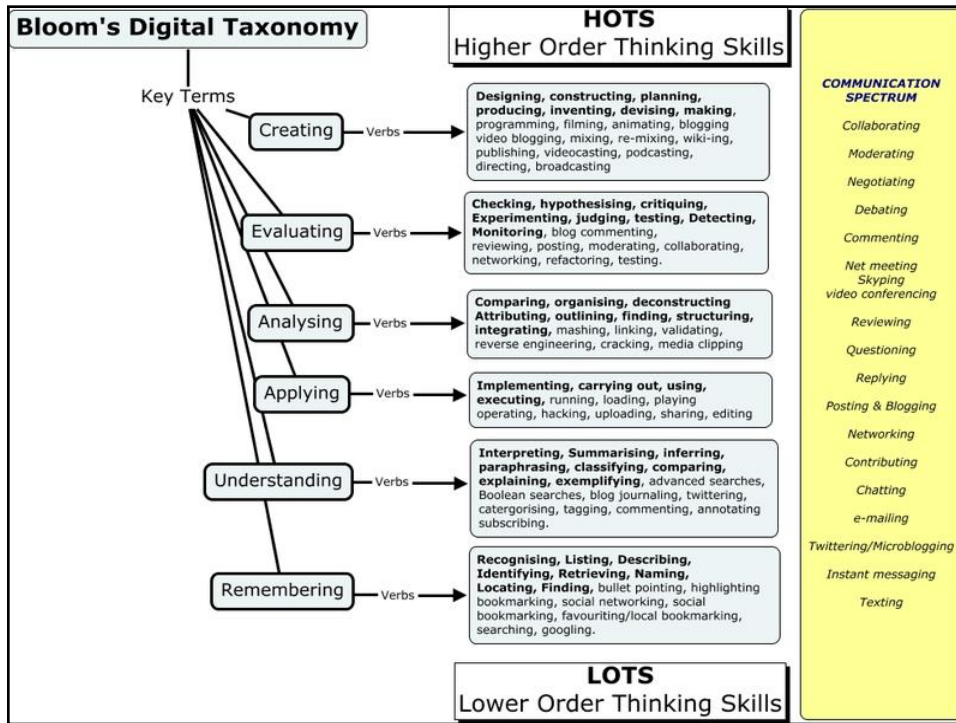
Applying

Understanding

Remembering

LOTS
Lower Order Thinking Skills

https://ctintegration.wikispaces.com/file/view/Bloom's_Taxonomy_comparison.png/128248303/624x457/Bloom's_Taxonomy_comparison.png



Phew!

Applying Adult Learning Theory

Summary: Design Principles

1. Base curriculum and interactions on real world, authentic situations that learners are familiar with, and/or will encounter in the job market.
2. Help learners “do” something with new information, whether it is in the context of a simulation, or a real world problem to solve.

Applying Adult Learning Theory

Summary: Design Principles

3. Create opportunities for regular and periodic reflection throughout the learning experience — including self-reflection, group reflection, and peer reflection.
4. Design ways for students to control the pace of their learning, such as the ability to pause, repeat or control the order of material, or access learning material anytime, anywhere.



Applying Adult Learning Theory

Summary: Design Principles

5. Facilitate self-directed learning via self-assessments, and tools for planning and goal setting.
6. Incorporate ways for students to interact with alternative points of view, either via projects and activities, or through collaborations with others who have diverse views and experiences.



