

## Engineering the Classroom Presentation References

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## Engineering the Classroom for Learning: Assistive & Instructional Technology Integration for Academic Success

Complete PowerPoint presentation can be downloaded at <http://www.paec.org/fdlrstech/handouts.htm>

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The more a student can self-customize a variety of tools and strategies, the more intelligent that student will be perceived, and the more intelligent that student will be.

The more a teacher can self-customize a variety of tools and strategies, the more professional that teacher will be perceived, and the more professional that teacher will be.

**Assistive Technology** – Technology that, when used by a student, enhances the performance or functioning of a target skill, including cognitive and physical abilities.

**Digital Text** – Text that can easily be altered to fit a student's or teacher's learning and instructional needs. Examples include rechunking, changing size, transforming from print to audio, print to sign, etc.

**Engram** – A possible explanation for the formation of a memory due to a biochemical change in the brain, including the formation of neural networks.

**Expressive/Communications Technology** – Technology tools that enable students to share thoughts and ideas with others, as well as research what others have to say. The social aspects of learning theories form an integral part of communication technology.

**Externalized Thinking** – The process of writing, drawing, sketching, gesturing, recording thoughts and ideas so an individual can reflect, organize, expand, and archive those ideas.

**Instructional Media** – The use of a variety of media to present information within the context of instruction. In the past this was typically viewed as textbooks. Instructional material can be analyzed in terms of content, structure, and presentation.

**Instructional Technology** – Technology that, when used by a teacher, enhances the instructional process. This includes the entire Florida Continuous Improvement Model.

**Long-Term Potentiation** – The increasing persistence of a memory due to repeated activation of an engram.

**Long-Term Depression** – The decreasing persistence of a memory due to the repeated activation of the engram of a related memory.

## AT for Learning Examples – Externalized Thinking

Inspiration

<http://www.inspiration.com>

MindJet

<http://www.mindjet.com/us/>

CMap

<http://cmap.ihmc.us/>

Curio

<http://www.zengobi.com/products/curio/>

OmniOutliner

<http://www.omnigroup.com/applications/omnioutliner/>

EverNote

<http://www.evernote.com/en/>

PlanPlus

<http://www.franklincovey.com/planplus/>

Solo

<http://donjohnston.co.uk/catalog/solofp.htm>

Classroom Suite

[http://www.intellitools.com/products/classroom\\_suite/home.htm](http://www.intellitools.com/products/classroom_suite/home.htm)

OneNote

<http://office.microsoft.com/en-us/FX010858031033.aspx>

Voodoo Pad

<http://www.flyingmeat.com/>

NoteTaker

<http://www.aquaminds.com/index.jsp>

SMART Board

<http://www.smarttech.com/support/software/index.asp>

## Tools/Virtual Manipulatives

bright clique

<http://www.indivisuallearning.com/site/products.php>

Explore Learning

<http://www.explorelearning.com/>

## Expressive/Productivity Technology

North Star Guide to Technology Planning

<http://www.fablevision.com/northstar/techplan/index.html>

**AT - Externalized Thinking**

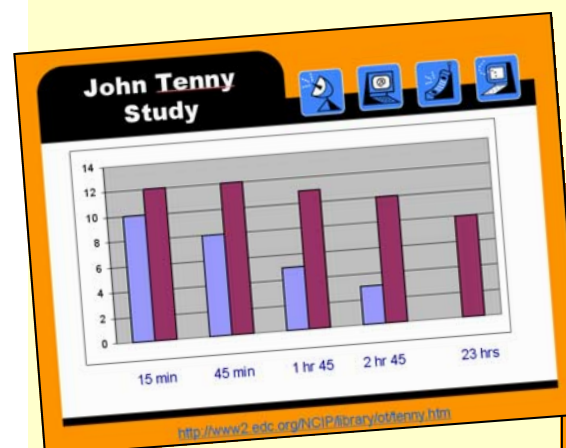
- Sketching, drawing, writing, speaking, gesturing
- Mindmaps, concept maps, diagrams, outlines
- Supports contemplation, review, analysis, revision
- Creates an external, "permanent" record
- Supports assistive technology for cognition

**Expression / Productivity**

- Creativity/Expression – art & music software
- Crafting/Building – modeling & crafts
- Exploration – online research
- Communication – blogging, podcasting
- Innovation/Problem Solving – simulations, virtual manipulatives
- Publishing/Sharing – writing tools

**Self-Determination**

- Self-generated cues are more effective than external-generated cues (Sharifian, 2001).
- Students that provide a self-explanation of their cue choices score higher than self-generated cues alone (Wong, Lawson, 1995)
- Given choices, students will self-select appropriate tools (Ferry, Hedberg, Harper, 1999)
- All students need to understand assistive technology and use it to problem solve learning challenges.



**Engineering the Classroom for Learning**

Assistive Technology	L e a r n i n g	Self Determination
Instructional Technology		
Information Technology		
Expressive Technology		

## Analyze Data

Data viewed over time (several years) provides instructional guidance.

<http://schoolgrades.fldoe.org/0405/>

School grade data for 2005

<http://firn.edu/doe/schoolgrades/>

School grade data for previous years

## Set Instructional/Skills Timeline

Performance support technology can impact the sequence of skills being taught and help create a highly constructivist learning environment. Examples include:

<http://www.intellitools.com/>

Writing & math support software

<http://www.mayer-johnson.com>

Writing With Symbols

<http://www.slatersoftware.com/>

Picture It & Pix Writer

<http://www.webmath.com/>

Online math calculators

## Set Instructional Focus

Instruction must be differentiated to effectively impact all students.

[http://www.paec.org/fdlrtech/Handouts/Top\\_10\\_Letter.pdf](http://www.paec.org/fdlrtech/Handouts/Top_10_Letter.pdf)

Top 10 Classroom Technologies

<http://www.tomsnyder.com/Products/product.asp?SKU=THITHI>

Thinking Reader

<http://www.donjohnston.com/catalog/1solo.htm>

SOLO Literacy Tools

<http://www.explorelearning.com/>

Virtual Manipulatives

<http://www.inspiration.com>

Inspiration

<http://www.smarttech.com/support/software/index.asp>

SMART Board (Interactive White Board)

## Assessment

Look for software tools that include assessment/data collection, as well as tools that includes questions based on the FCAT structure.

<http://www.riverdeep.com>

Riverdeep Destination Success

<http://www.fcatestmaker.com>

FCAT TextMaker

## Tutorials

When there is a need for remediation or intervention, don't forget to address the issue of accommodations, tools, and memory strategies.

<http://www.inspiration.com/home.cfm>

Cognitive Organizer

<http://www.mathpower.com/tutorial.htm>

Student authored algebra tutorials

<http://www.apexlearning.com/Solutions/classtools.htm>

Example online math tutorials

<http://www.education2000.com/demo/demo/algebra1.htm>

Example math software

## Enrichment

Simulations can be a great tool for providing enrichment.

<http://www.sodaplay.com/>

Interactive model creation

<http://www.riverdeep.com>

Interactive virtual labs

Creativity software can help processing skills.

<http://www.sketchandsmudge.com/>

Sketch & Smudge

## Maintenance/Monitoring

Provide mini lessons and activities to refresh prior learning. This can be a revisit to an instructional focus activity, a quick mini tutorial, a review of a memory portfolio, an enrichment activity, etc. Principals should do walk-throughs to monitor progress.