



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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Assistive Technology – Technology that, when used by a student, enhances the performance or functioning of a target skill, including cognitive processes, learning, sensory, 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 media is only instructional if it matches the student's capabilities and needs.

Instructional Technology – Technology that, when used by a teacher, enhances the instructional process.

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.

Comparisons of AT Mindsets

1980's and 1990's

Primarily determined by Physical Therapists, Occupational Therapists, and Speech Therapists

Often based on performance with an "access" language

Based on the technology of the day

AT Plans and outcomes based on device usage success

2006 (Today)

Determined by the student and team as needed, addressing all student support needs

Based on performance with a "performance" language

Simple accommodations and digital technology freely available

AT Plans and outcomes based on user success beyond the device

AT for Thinking & Memory

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| Scaffolding and support for: Memory Engagement (and length of time) Categorization Pattern Recognition Clarifying Analyzing Synthesis | ADHD Engagement / Extended Engagement Organization Skills Activity Completion / Follow Through Memory Learning Disabilities Organization Skills Memory Pattern Recognition Linear / Text Writing |
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"Stock the Shelf" Basics

Internet

Microsoft Office

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

Open Office

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

Docs and Spreadsheets (Google)

<http://www.google.com/intl/en/options/>

Evernote

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

Acrobat Reader / Standard

<http://www.adobe.com/products/acrobat/matrix.html>

Picasa

<http://picasa.google.com/>

iPhoto

<http://picasa.google.com/>

Audacity

<http://audacity.sourceforge.net/>

Garage Band

<http://www.apple.com/ilife/garageband/>

CMap

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

FreeMind

http://freemind.sourceforge.net/wiki/index.php/Main_Page

Inspiration

<http://www.inspiration.com>

InspireData

<http://www.inspiration.com>

iMovie

<http://www.apple.com/imovie/>

Movie Maker

<http://www.microsoft.com/windowsxp/using/moviemaker/default.mspx>

“Stock the Shelf” Quick Changes / UDL

ReadingBar – ReadPlease

<http://www.readplease.com>

Natural Reader

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

Speaking Notepad

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

1st Read It Aloud

http://www.softsland.com/1st_Read_It_Aloud.html

Read-e

<http://www.read-e.com/>

Speechzilla for WORD

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

SOLO

<http://www.donjohnston.com>

Classroom Suite

<http://www.intellitools.com>

Kurzweil

<http://www.kurzweiledu.com>

Read & Write Gold

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

TextAloud

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

FreeTranslation

<http://www.freetranslation.com/free/>

Mapping Information

Mapping information is a scaffolding technique that supports pattern recognition, information organization, and memory.

Tools include:

- Highlighters
- Comments
- Stamps
- Font Attributes

Mapping strategies may need to be customized to specific student needs, through most strategies work with most students.

1. Scaffold connections by color coding connections to self (past experiences, prior knowledge), media (books, songs, movies, articles), and events (people, issues, news).
2. Scaffold connections by color coding connections to senses (I can taste, hear, smell, visualize, etc.).
3. Scaffold organization by color coding people, places, dates, vocabulary.
4. Scaffold ideas by color coding what initially catches attention.

Higher Order Thinking Scaffolds

Many students with disabilities require visual representations of higher order thinking skills to analyze and synthesize information.

Tools include:

cMap

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

FreeMind

http://freemind.sourceforge.net/wiki/index.php/Main_Page

Inspiration

<http://www.inspiration.com>

InspireData

<http://www.inspiration.com>

Use graphic organizers to provide visual scaffolds for thinking processes like compare/contrast, concept maps, brainstorming, problem analysis, data analysis, and information synthesis. Graphic organizers can also be used to help keep students on task and scaffold longer periods of engagement. For ideas, see the Computer Based Study Strategies examples at <http://cbss.uoregon.edu/clearing/index.html#>.

Memory Journals

Many students with disabilities have problems with memory and making connections to past learning. Externalized memory journals can make a difference.

Tools include:

Evernote

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

OneNote

<http://www.microsoft.com/office/onenote/>

PlanPlus

http://www.franklincovey.com/fc/get_organized/electronic_planning_systems/planplus_for_windows_xp

Smart Software

http://www.smarttech.com/support/software/sb_win.asp

Simulations

Simulations provide a learning environment where students can engage in problem solving and decision making exercises while learning from mistakes. Cognitive maps can assist students to problem solve. Simulations can often be controlled by mouse emulators.

Examples include:

Riverdeep Virtual Labs

<http://www.riverdeep.com>

Pintar Virtual Labs

<http://www.pintarmedia.com/vprod/>

SodaPlay

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

ExploreLearning

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

Data Collection

Data collection moves from the use of technology to the impact of technology on academic goals and objectives.

An example data collection system:

FDLRS Data Form

<http://www.surveymonkey.com/s.asp?u=988562572426>

FDLRS Sample Report

<http://www.paec.org/fdlrstech/handouts/sunrisedata.pdf>

FDLRS Sample Raw Data

<http://www.paec.org/fdlrstech/handouts/sunrise%20summary.pdf>