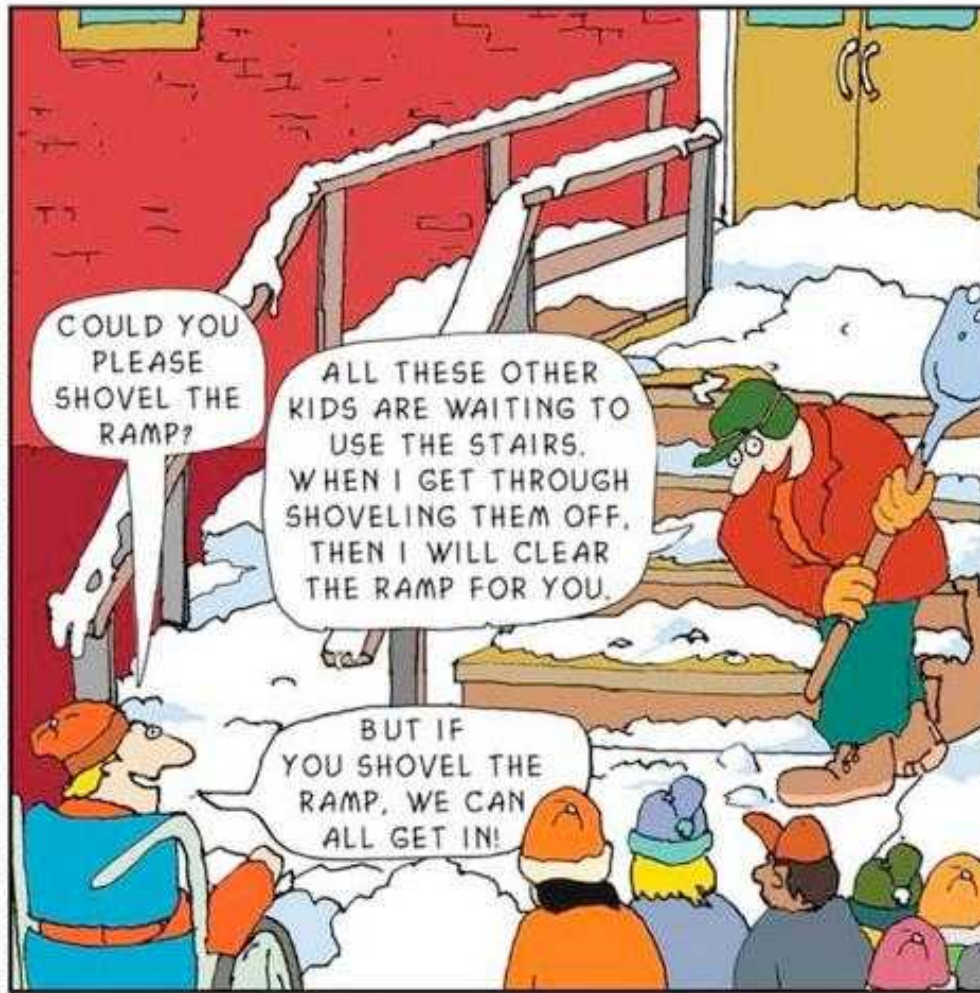


Using Assistive Technology within the Framework of Universal Design for Learning in Inclusive Schools

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INSPIRED BY A PUBLIC SCHOOL STUDENT WITH DISABILITIES



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CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!

[http://etec.ctlt.ubc.ca/510wiki/Universal Design for Learning](http://etec.ctlt.ubc.ca/510wiki/Universal_Design_for_Learning)

UDL Assumptions

- Not one size fits all – but *alternatives for everyone*
- Not added on later – but *designed from the beginning to accommodate a broad range of learners*
- Not access for some – but *access for everyone*



Universal Design for Learning



- UDL provides makes the curriculum accessible by providing multiple means of:
 - ❖ (a) *representation* by presenting information through different modalities;
 - ❖ (b) *expression* by enabling students to express their knowledge through oral, written or other modalities; and
 - ❖ (c) *engagement* by providing multiple ways to motivate and engage students (CAST, 2008).

Universal Design for Learning

(UDL)

MEMORIAL
UNIVERSITY

is an approach to improve and optimize teaching and learning for *all* by setting clear, rigorous **goals**; anticipating **barriers**; and proactively **designing** to minimize those barriers.

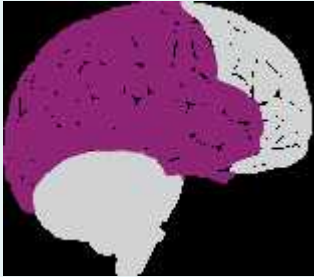
Universal Design for Learning



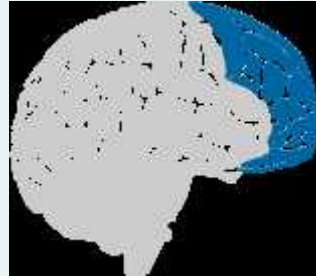
By presenting information in a variety of ways, teachers can activate the recognition, strategic, and affective domains of learning (CAST, 2010).

From Brain Research...

Recognition Network The “what” of learning.



Strategic Network The “how” of learning.



Affective Network The “why” of learning.



- How we gather facts and categorize what we see, hear, and read.
- Identifying an author's style is a recognition task.

- How we organize and express our ideas.
- Writing an essay or solving a math problem are strategic tasks.

- How learners get engaged and stay motivated.
- How they are challenged, excited, or interested.

Presentation

- Present information and content in different ways.
- PPTs, handouts, videos etc.

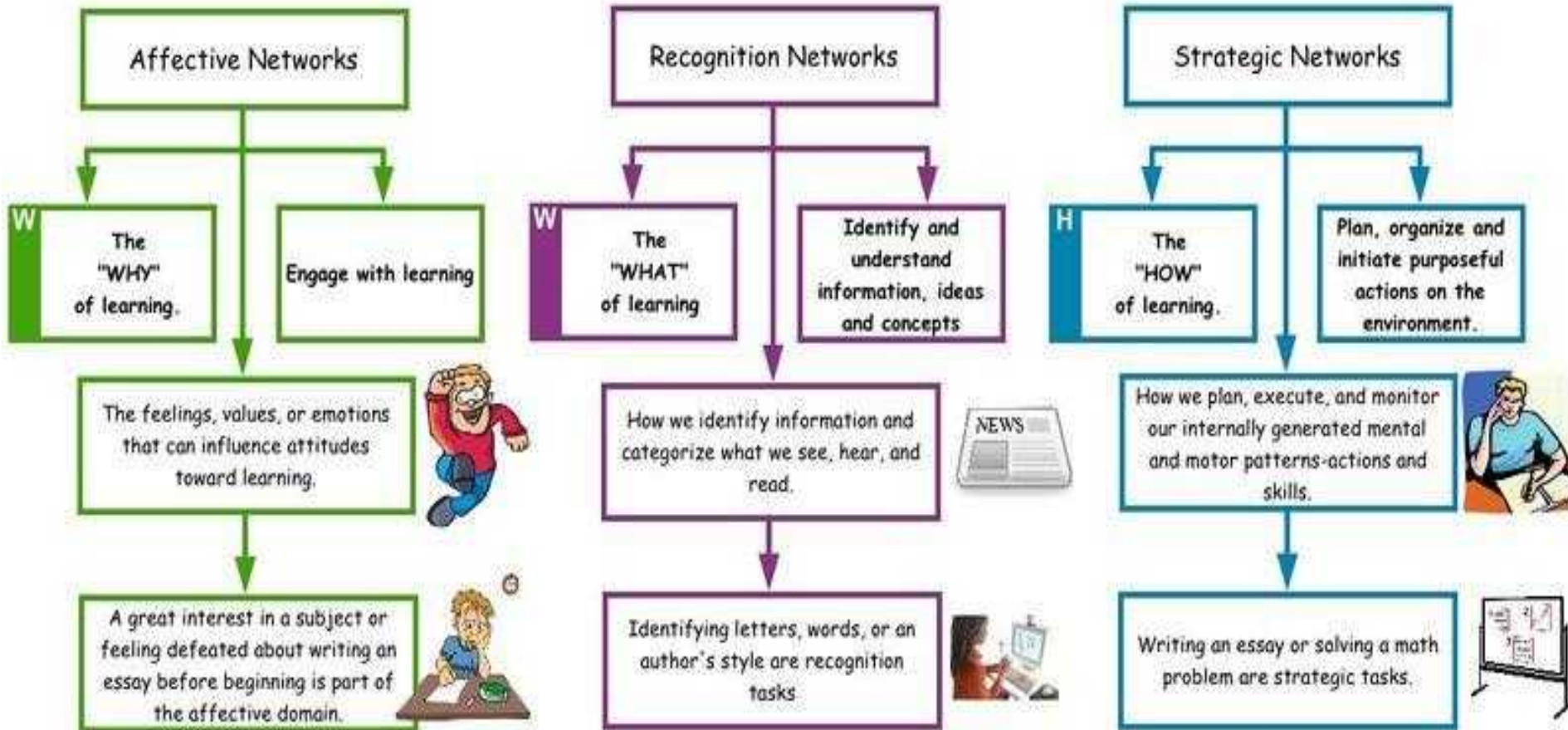
Expression

- Differentiate the ways that students can express what they know.
- Exams, presentations, essays, group work etc.

Engagement

- Stimulate interest and motivation for learning.
- Provide choice, relevance, no distraction etc.

Brain Networks



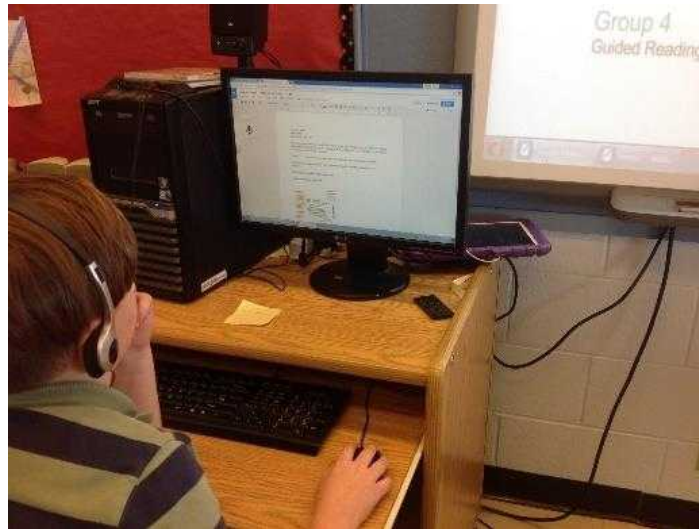
Assistive Technology (AT)



- AT refers to any equipment that improves a person's functional capability.
- For high-incidence disabilities this includes:
 - ❖ general instructional technology
 - (e.g., SMART Boards and iPads),
 - ❖ software programs that support the reading and writing process through
 - text-to-speech (e.g., Kurzweil),
 - speech-to-text (e.g., Dragon Naturally Speaking),
 - graphic organizers (e.g., Inspiration), and
 - word prediction capabilities (e.g., WordQ).

Assistive Technology

- In comparison to other interventions, AT may have a significant effect in helping students with disabilities progress towards the goals outlined on their IEPs (Watson, Ito, Smith, & Andersen, 2010).



Assistive Technology



- AT can support any stage of the writing process and writing in all subject areas.
 - ❖ (Evmenova & King-Sears, 2014)
- Review of 28 studies regarding the use of technology to support the written productivity of children with LD.
 - ❖ Evidence was moderately low.
 - ❖ Some positive influences from some technology on students writing performance and behavior.
 - ❖ (Batorowicz, Missiuna, & Pollock, 2012).

Teacher Nomination



- Principals were asked to nominate teachers who are recognized for their strengths in instructional design and implementation of assistive technology.
- Wanted to identify teachers who:
 - ❖ (a) *present information in a variety of formats,*
 - ❖ (b) *enable students to demonstrate what they know in a variety of ways, and*
 - ❖ (c) *allow all students in their class to use ministry licensed assistive technology software which is available on school computers or devices.*

Examples of UDL & AT in action to support student learning



- **Plickers**
- **Kidspiration / Inspiration**
- **Write About This**
- **Snap Type**
- **Google Docs**
- **Read & Write**
- **iBooks**



plickers

clickers, simplified



Library

Temperature Increase of 6 degrees

A $t - 12$

B $t + 6$

C $m + 5$

D $l - 6$



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