

Reading & Writing Tools



Greg O'Connor

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Spectronics





RaisingSmallSouls.com

presents

"Animal School"

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Using Technology to assist Students with Learning Disabilities and Difficulties.



Write
ONLINE



More Information?

- <http://www.spectronicsinoz.com/blog>
- <http://gregoconnor.wikispaces.com>



What is a Learning Disability?

- Blurred line between leaning difficulty and learning disability
- Difficulties not due primarily to intellectual, sensory or emotional disabilities
- Disorder in the physiological developments involved in acquiring academic skills and understanding key concepts – reading, writing, spelling, listening, calculating, organising, memorising etc

www.ldonline.org

Clapp, S (2008) <http://stephanie-portfolio.weebly.com/index.html>



What is a Learning Disability?

Social emotional & motivational problems

- Reluctance to answer questions & participate in classroom discussions/activities
- Involved in fewer extra-curricular activities
- Withdrawal – defense mechanism
- Passive and unmotivated learner
- Behavioural concerns



Barriers to Learning & Opportunity

Students with disabilities and learning difficulties have

“impaired access, participation and progress throughout (learning opportunities)”



Incidence?

- “Mapping the Territory Report” (2000) states that between 6% and 30% of students will experience difficulties with learning.

(Mapping the Territory: Primary Students with Learning Difficulties Literacy and Numeracy, Commonwealth Department of Education, Australia)



Incidence?

- One in eleven Australian students have a Language Learning Disability.
(*Brent, Gough & Robinson 2001 One in Eleven. Practical Studies of Teaching Adolescents with Learning Difficulties. ACER*)



Incidence?

- More than 30% of children entering high school have literacy difficulties (*ACER*)
- Almost 50% aged 16-65 do not have the necessary literacy and numeracy levels to deal with present-day work requirements (*OECD data reported in the Age Oct, 2001*)



Barriers to Learning & Opportunity

Students with disabilities and learning difficulties have

“impaired access, participation and progress throughout (learning opportunities)”

while at the same time they are.....



Live in a Digital World

- We live in a Digital World.
- Digital Literacy is important & necessary.
- We need to provide students with the tools to assist them with reading, writing, research, organisation and numeracy.



Barriers to Learning & Opportunity

Students with disabilities and learning difficulties have

1. “impaired access, participation and progress throughout (learning opportunities)”,

while at the same time

2. “prepare for an environment where they will spend more time reading and using information on the internet than they will reading from a printed book”

(Strangman and Dalton 2005)



Using technology to remediate or compensate for difficulties

1. Reading tools
2. Writing tools
3. Organisational and study tools

Technologies to accommodate different learning styles



Emerging Research

- Improved comprehension
- Improved engagement
- Improved written output
- Universal Design for Learning

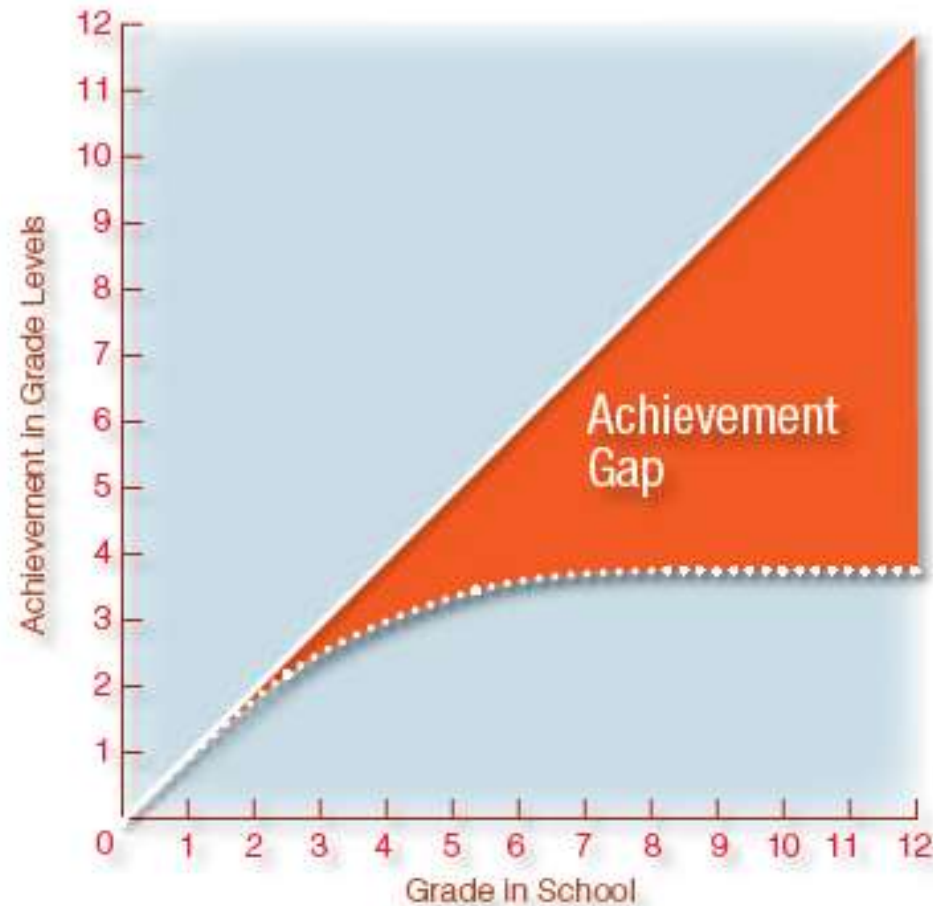


Barriers to Learning & Opportunity

Assistive technology...can remove barriers and enable (students) to gain more equitable access to successful learning experiences and accomplish things not thought possible before (Sitko, Laine and Sitko, 2005)



Remediation vs Compensation



Edyburn (2006) <http://www.uwm.edu/~edyburn/L%26L2006.pdf>



Inclusive Technologies

emphasizes the use of technologies to enable inclusive practices for students with disabilities and learning difficulties

Abbott, C. (2007). E-inclusion: Learning Difficulties and Digital Technologies



The DDA and Disability Standards for Education

- The *Disability Discrimination Act (DDA)* makes discrimination on the grounds of a person's disability against the law
- The Disability Discrimination Act (DDA) Education Standards became federal law in August 2005



The Disability Standards for Education

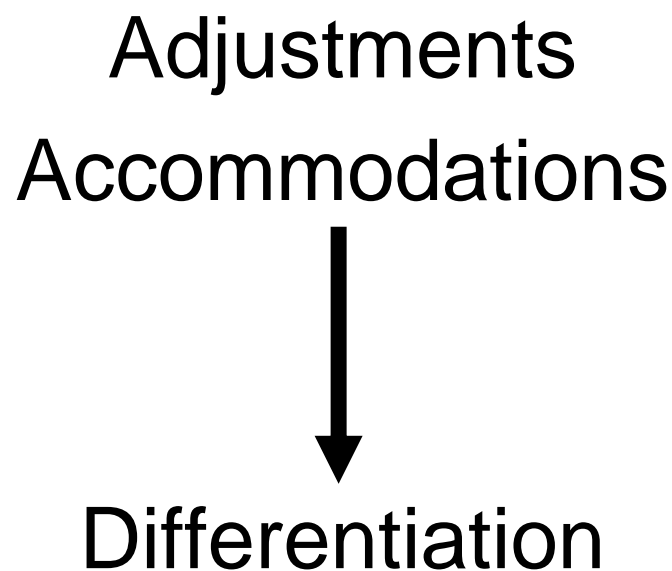
...making sure that students with a disability have the same opportunities to participate in school or a course as other students. This may mean making adjustments to how the course is taught, what materials are used, and how students will be assessed...





Differentiating Instruction

“making adjustments to how the course is taught, what materials are used, and how students will be assessed”



One size fits all?



Factors influencing learning

- Effectiveness of the classroom teacher has the most influence on student learning (Hattie 2003)
- Number of opportunities that students have to respond to teacher directions and instructional materials is strongly associated with learning and achievement (Hook 2006)



E-Inclusion

E-inclusion emphasizes the use of technologies to enable inclusive practices for people with disabilities and learning difficulties

Abbott, C. (2007). E-inclusion: Learning Difficulties and Digital Technologies



Web Links

Learning Disabilities

- [LD Online](#)
- [Learning Disabilities Project](#)
- [Abbott, C. \(2007\). E-inclusion: Learning Difficulties and Digital Technologies](#)

Assistive Technology

- www.techmatrix.org/
- www.spectronicsinoz.com

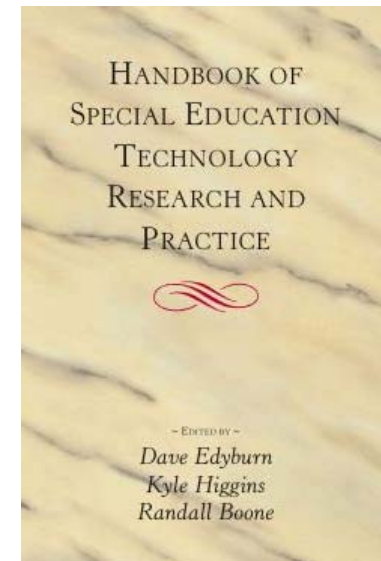
Universal Design

- www.cast.org



Research

- <http://gregoconnor.wikispaces.com>
- Edyburn, D., Higgins, K., & Boone, R. (Eds.). (2005). *Handbook of Special Education Technology and Research*. Whitefish Bay, WI: Knowledge by Design, Inc.

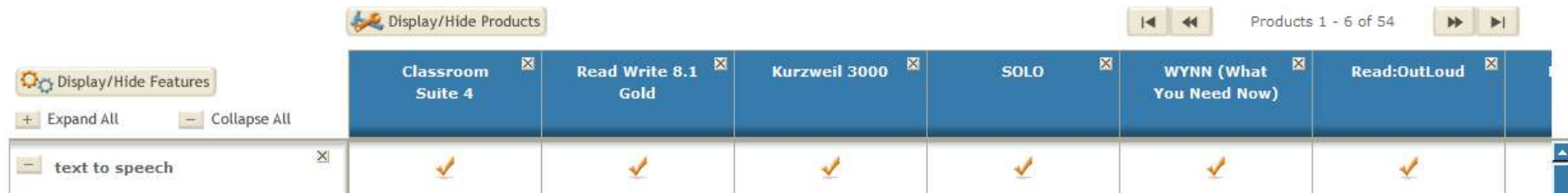


Inclusive Learning Technologies

- Literacy support software is becoming increasingly important to either remediate or compensate for literacy difficulties



Reading Tools



- Read aloud (Aust. voices / highlighting)
- Read formats (doc/pdf/html/images/txt/rtf)
- Dictionary & Thesaurus (text to speech)
- Text to audio capabilities (audio creation)
- Scanning to text
- Customization – eg pitch/speed/volume/voice



Writing tools

Display/Hide Products

Products 1 - 6 of 23

Display/Hide Features

Expand All Collapse All

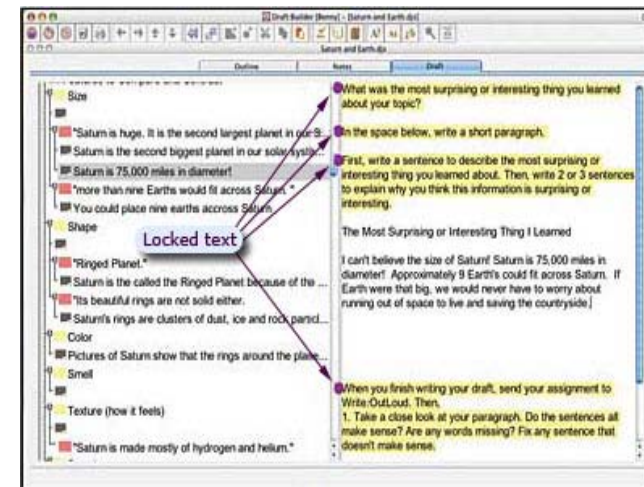
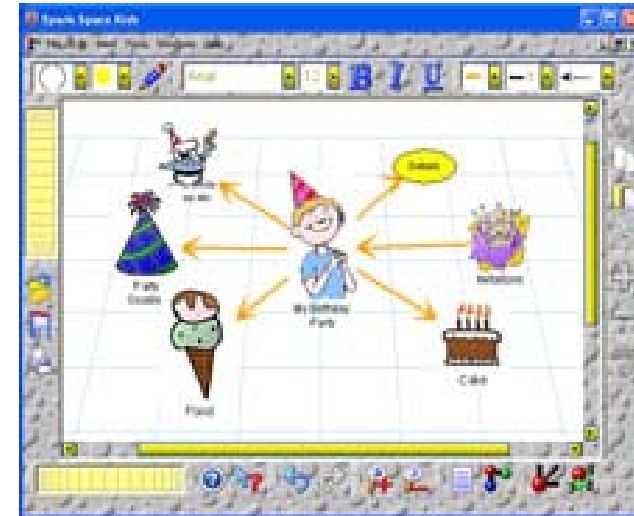
	Read Write 8.1 Gold	Neo	Kurzweil 3000	SOLO	WYNN (What You Need Now)	Dragon Naturally Speaking Preferred
text to speech	✓		✓	✓	✓	✓
word prediction	✓	✓	✓	✓	✓	

- Speak as you type – letter/word/sentence
- Word finder (phonetic)- text to speech
- Spell checker (phonetic) – text to speech
- Word prediction (phonetic)–text to speech
- Integrated Dictionary/Thesaurus
- Flexibility to add/customize wordlists
- Speech Recognition
- Notetakers e.g. NEO2



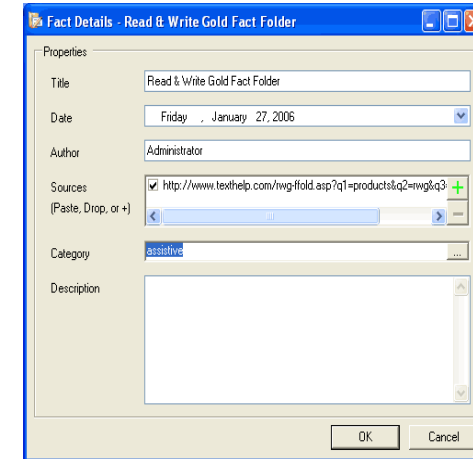
Organisational tools

- Brainstorming
- Structuring & expanding ideas
- Mind Maps
- Structured Frameworks
- Grids & Templates
- Notetakers

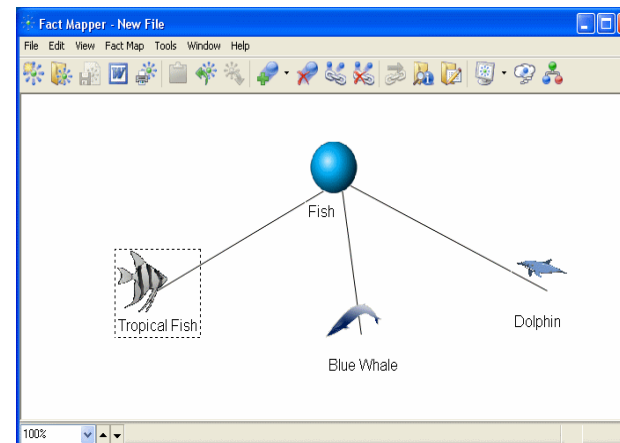


Study & Research tools

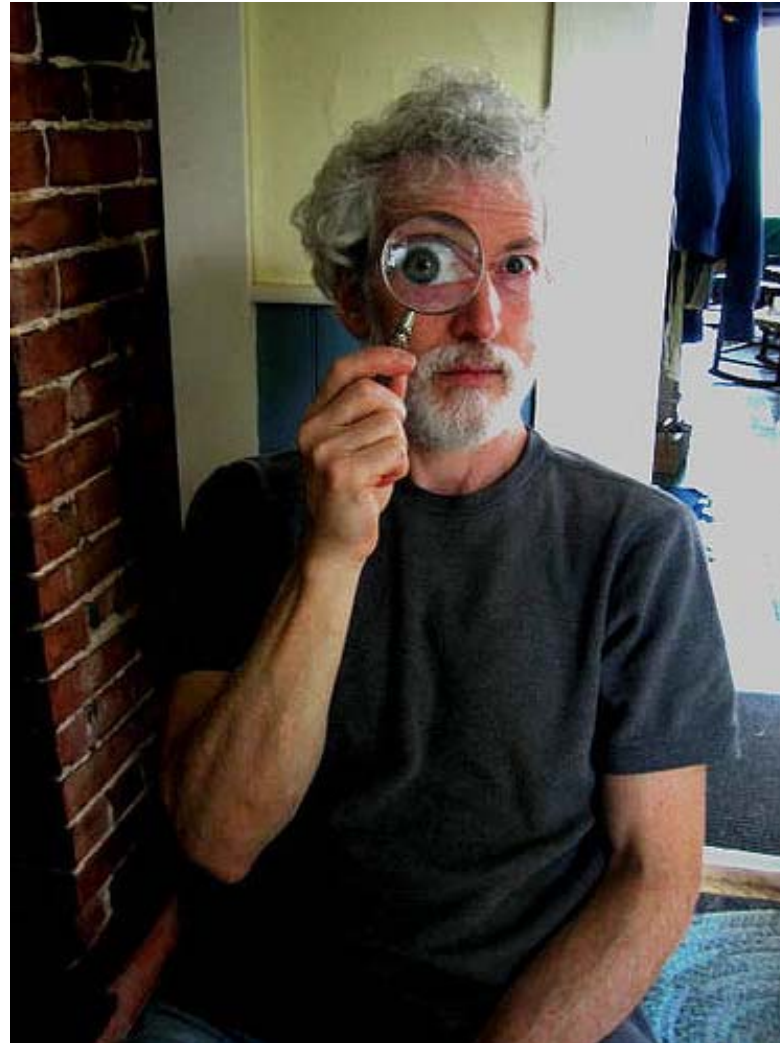
- Highlight, extract & collect information



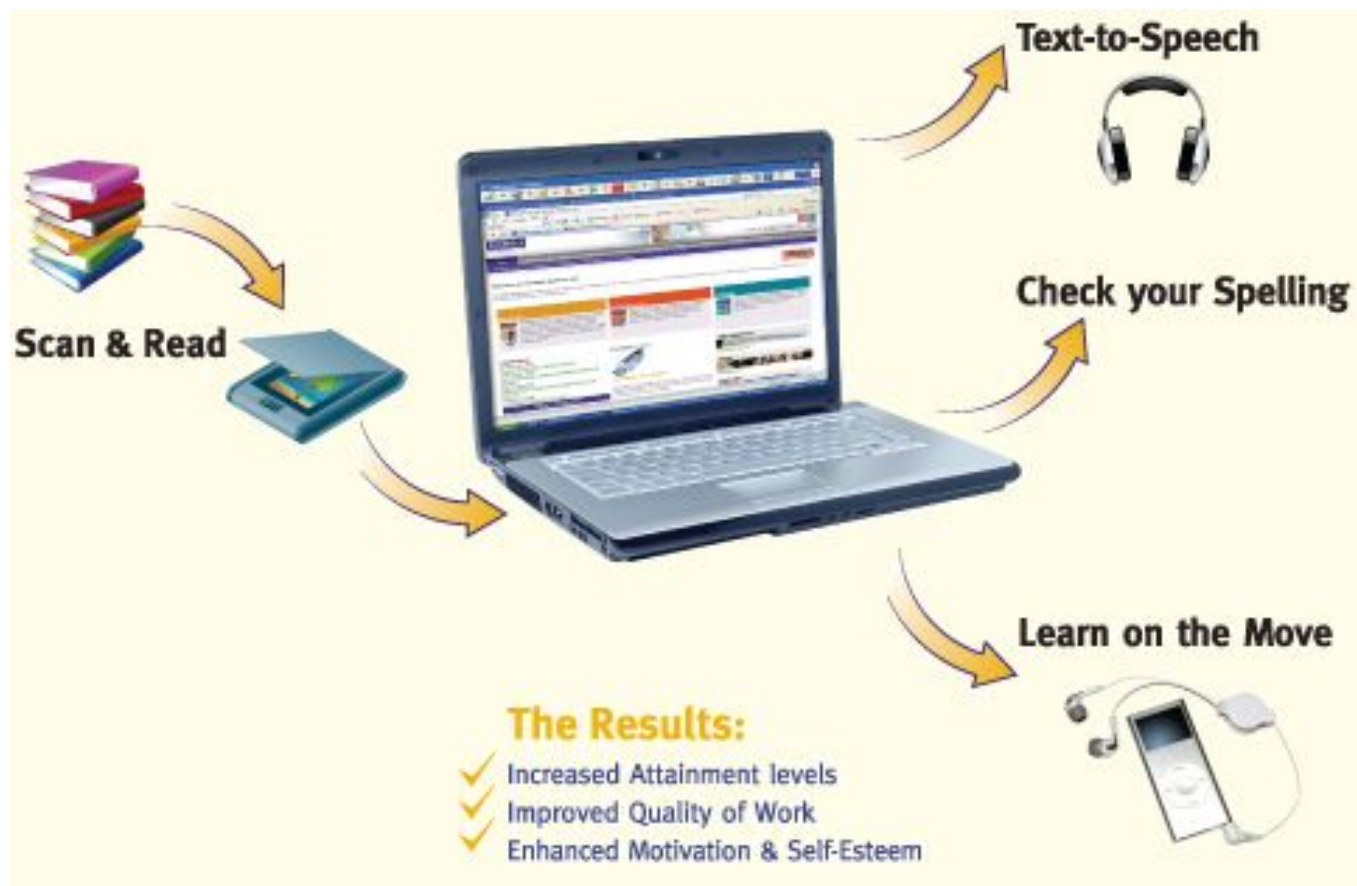
- Search, collect & store information & images from web pages
- Notetakers



Let's take a look



Reading Tools



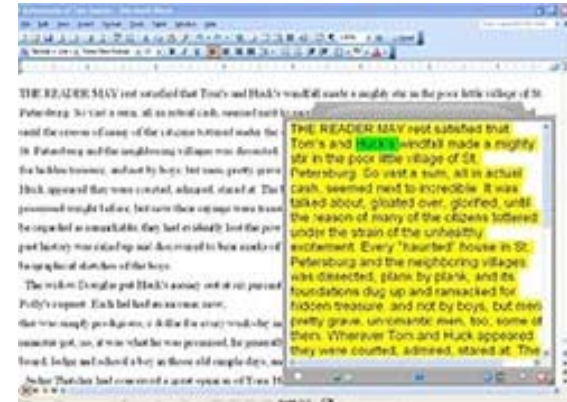
Reading Tool Features

- Read text aloud (text to speech)
- Dictionary & Thesaurus
- Text to audio capabilities
- Scanning to text




Reading Tools

- Kurzweil 3000
- TextHELP Read & Write
- WordQ / SpeakQ
- ClaroRead
- Read:OutLoud SOLO



Comparison Chart

<http://www.spectronicsinoz.com/article/literacy-support-software-comparison-chart>

 Literacy Support Software Comparison Chart			
	Texthelp Read&Write 9 Gold	ClaroRead Plus 2009 for Windows	Kurzweil 3000 for Windows v11
Age	7+	7+	7+
Platform	Windows	Windows	Windows
USB Device	Available	Available	Available
Operating System required	Windows 2000, XP, Vista	Windows 2000, XP, Vista	Windows 2000, XP, Vista
SPEECH TOOLS - Speech Output	Texthelp Read&Write 9 Gold	ClaroRead Plus 2009 for Windows	Kurzweil 3000 for Windows v11
Australian Voices	Y	Y	
After Pitch	Y		
Speed Control	Y	Y	Y
Volume	Y	Y	
Word Pause	Y	Y	



textHELP Read & Write Gold



- Reading tools
- Comprehension and vocabulary building supports
- Writing Tools
- Research and Study Tools



Who uses it?



- Students with learning difficulties and dyslexia
- Students learning English as a second language
- Students with physical impairments
- Program has application for all students in an educational setting
- Equally applies to adults



Where is it used?



- Schools
- Post school education – eg TAFE, universities
- Corrective services
- Work settings

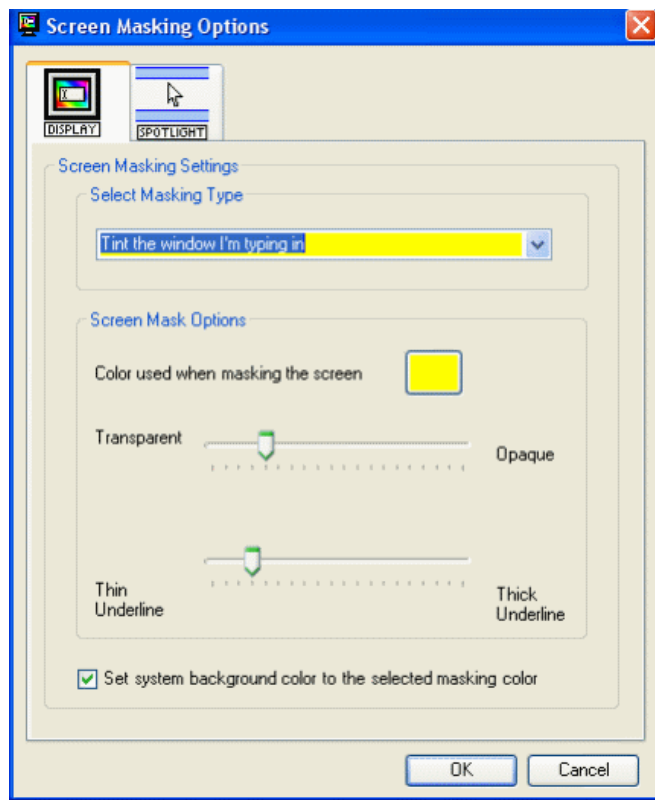




New Features in Version 9



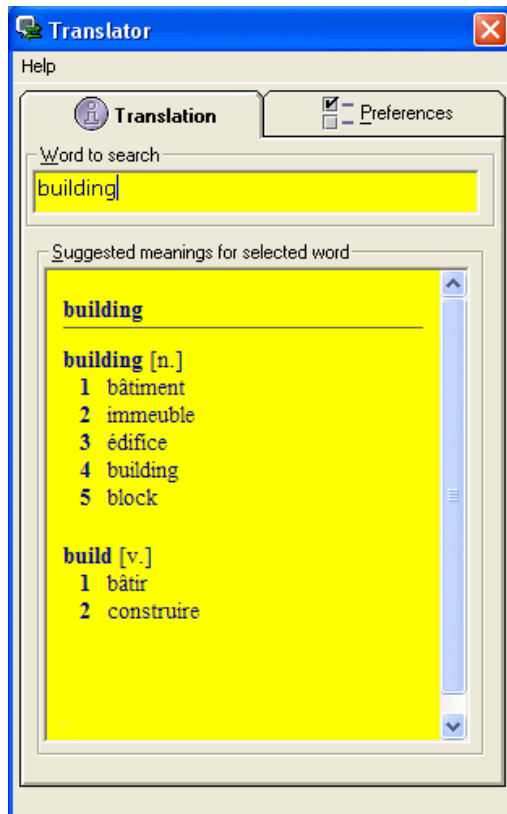
Screen Masking



- Tint screen
- Aid reading and improve focus
- Underline
- Choice of colours
- Has Spotlight option



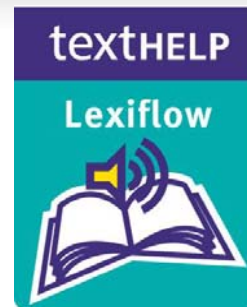
Translator



- Online
- French/Spanish/
German and Italian
- Translation can be read
- Adapt :
 - Language
 - Voice Speed
 - Font Size



Lexiflow



School Site Licences Only



Lexiflow

- With Lexiflow, you can take a PDF source document, correct its reading order and preview and correct how the text is spoken.
- You can then generate a Flash presentation of your document, offering:



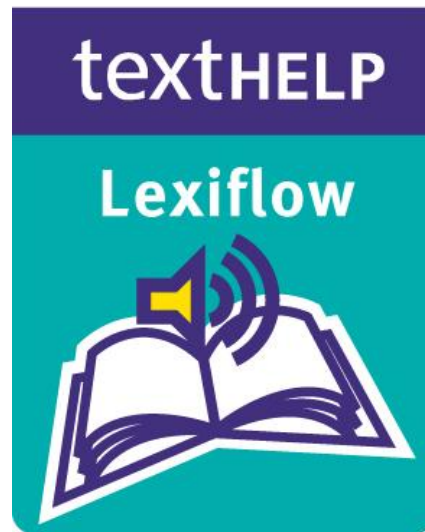
Lexiflow

- Navigation through the document, including table of contents and zooming
- Speak text on any page by clicking the mouse
- Speech with dual-colour highlighting to improve comprehension
- A dictionary and word translator
- Commenting tools
- A simple calculator



Lexiflow

- This Flash presentation can be distributed via CD, DVD or on a website, and will work on both Windows and Macintosh computers



Dolphin Producer



- EasyProducer converts standard Word files into [DAISY](#) digital talking books (synchronised audio and text) that can be searched and navigated.
- EasyProducer also effortlessly creates MP3 speech files from text; EasyProducer integrates all these DAISY, MP3, and reading functions seamlessly with DAISY and digital audio (MP3) players.



Reading Tools

- Classmate Reader



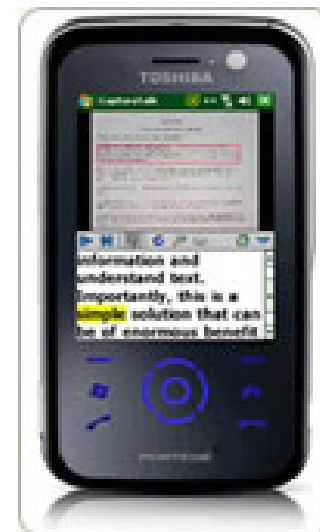
Reading Tools

- **Portable, digital audio book player**
- **Increases student independence**
- **Increase student self esteem**
- **Study tools to enhance learning**



CapturaTalk

- With a mobile phone use CapturaTalk to photograph text and have it read out aloud using text to speech



Reading Tools

- **AccessApps:**

Microsoft Word - *WordTalk*

PowerPoint – *PowerTalk*

Mozilla Firefox – *Accessibar*

- **E-books:**

Accessible Book Collection -

www.accessiblebookcollection.org

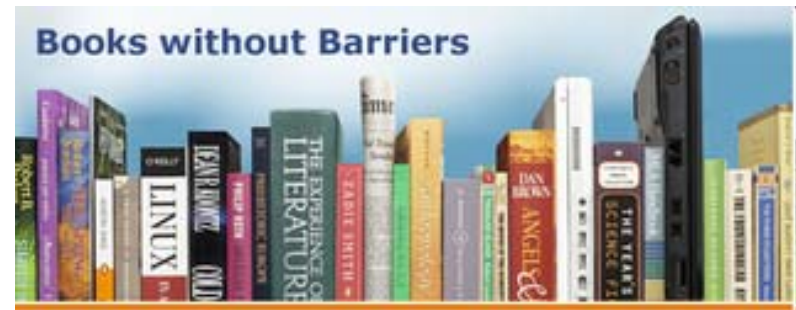
Bookshare - www.bookshare.org

Project Gutenberg Online eBook resource with over 20,000 free books -

http://www.gutenberg.org/wiki/Main_Page

Tar Heel Reader

<http://gb-cs.cs.unc.edu/TarHeelReader/category/books/>

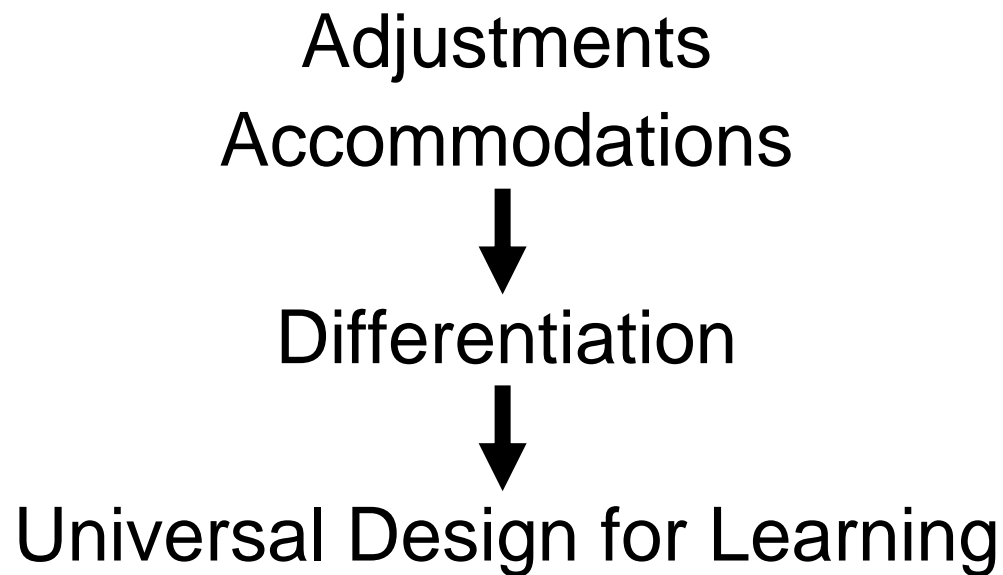


Stretch and Reflect



Differentiating Instruction

“making adjustments to how the course is taught, what materials are used, and how students will be assessed”



Universal Design for Learning

Universal Design for Learning UDL

The concept underlying this framework comes from universal design in architecture where modifications and design principles are employed to ensure access for all.

UDL



Universal Design for Learning

- Universal design for learning attempts to create a curriculum which provides equal access to information and allows the student to control the method of access.
- Universal design for learning does not remove challenges – it removes barriers to access



Differentiation

- Responding to student readiness levels, interests and learning profiles
- Providing high-quality curriculum and instruction and ongoing reflection on this quality
- Ensuring respectful activities for all students
- Flexible grouping
- No recipe book

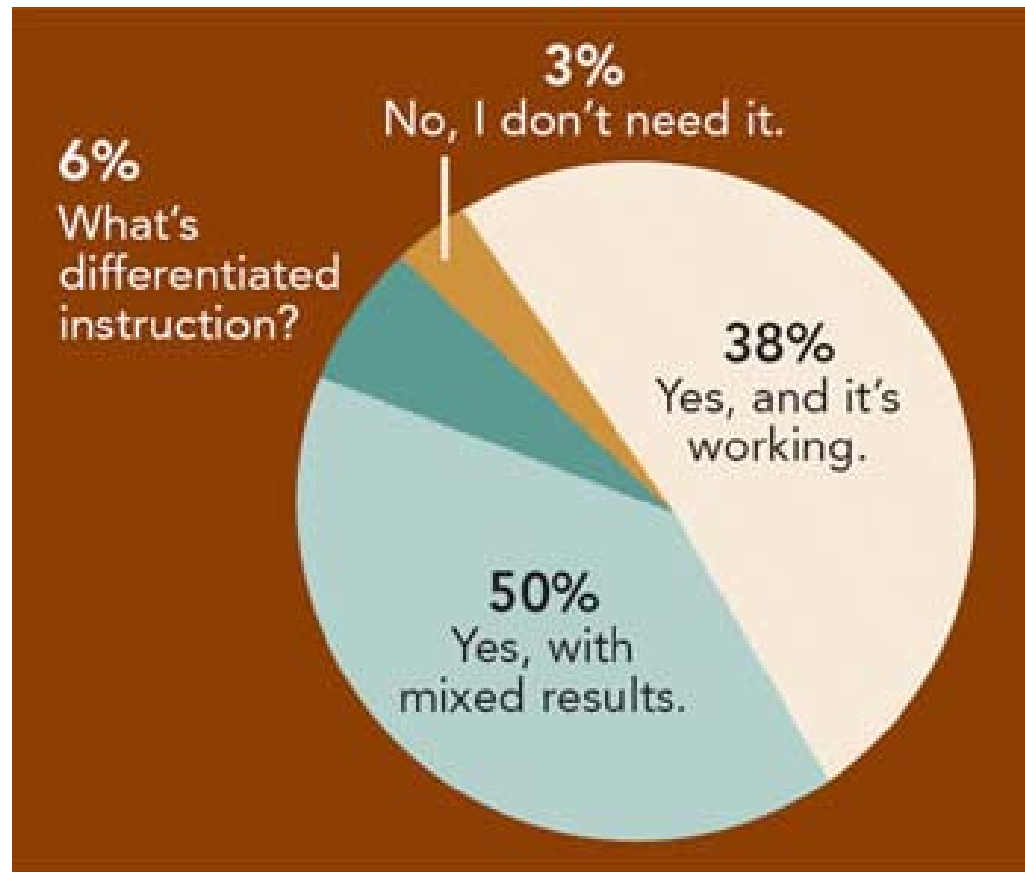


Differentiation - Issues

- Teachers find it difficult to adapt and tailor the curriculum and prepare multi-level resources – preparation time, class sizes, workloads
- Students with disabilities and learning difficulties require instruction that is “efficient, intense, relentless, carefully sequenced and monitored”
- Not a soft option



Are you using differentiated instruction in your classroom?



Universal Design for Learning & Differentiation

- Design curricula, teaching and learning experiences based on UDL.

but

- Differentiation still needed for some students for more individualised approaches and support



Universal Design for Learning



CAST - Center for Applied Special Technology

<http://www.cast.org/research/udl/index.html>

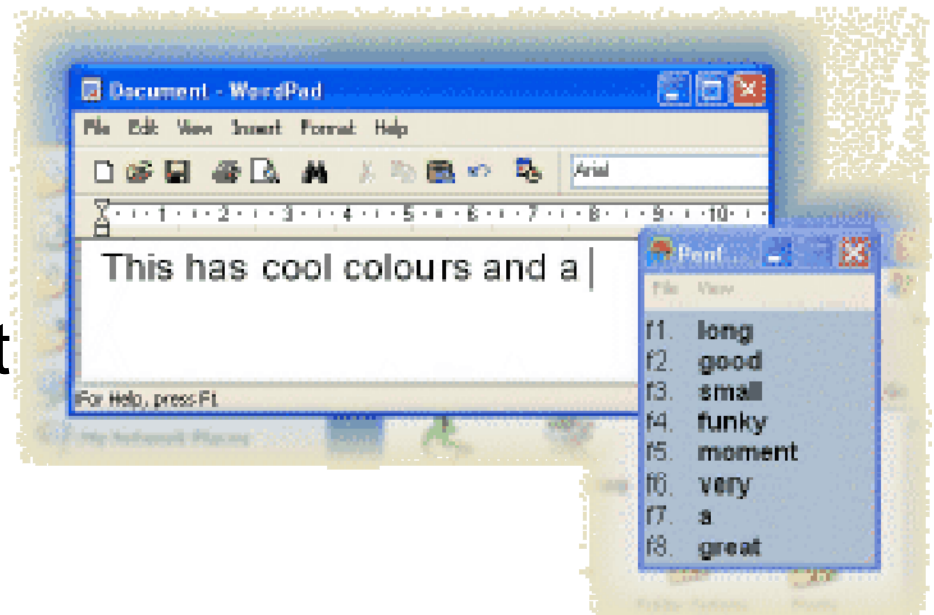


Writing Tools



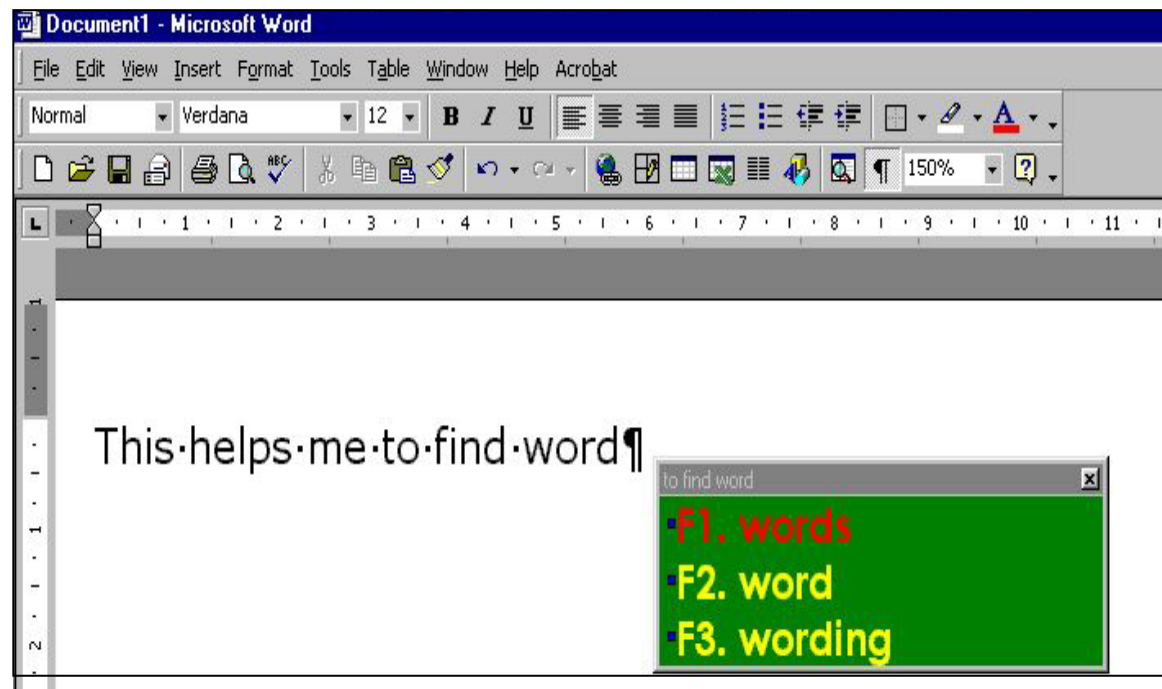
Word Prediction – Writing support

- predicts the next word you want to write
- uses a dictionary of known words, Every time you type a letter, it comes up with a new list of the most likely words which fit your letters
- Learns as you type
- If you're not sure how to read it, you can hear it spoken before you choose a word



Word Prediction – Writing support

- Helps complete the word you are spelling
- Speech feedback of words in list
- Useful for rate enhancement for those with slow or inaccurate typing
- Reduces fatigue



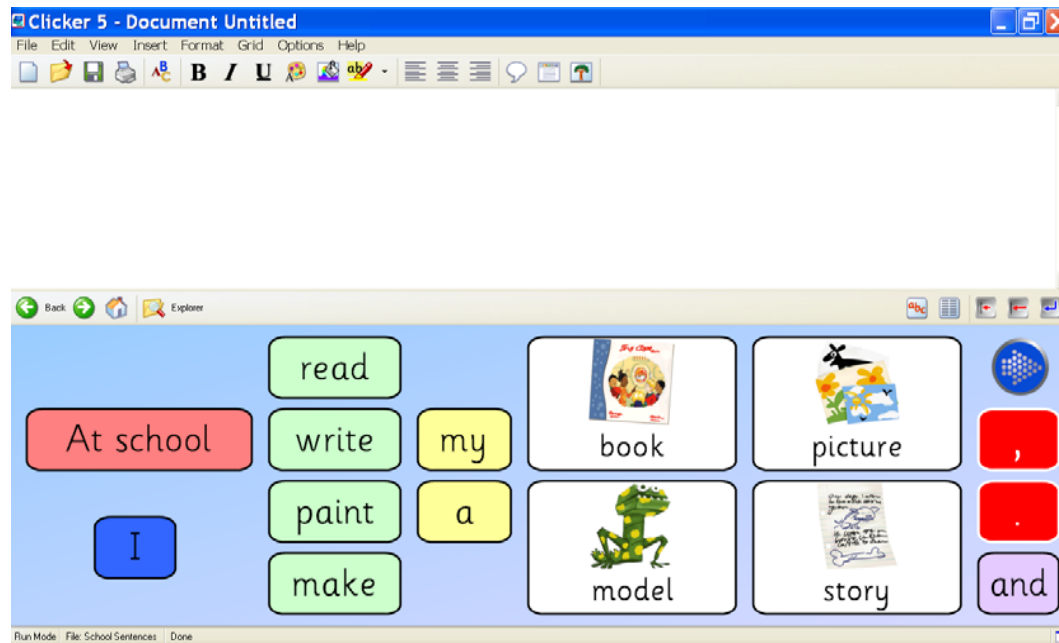
Word Prediction provides:

- Supportive writing strategies for **emergent writers** and **English as a Second Language** users
- For students with **physical disabilities** – their pen and paper, reducing the number of key strokes required
- For students with **intellectual disabilities** – an adapted learning environment that maximises learning



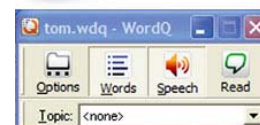
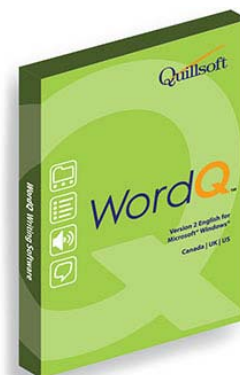
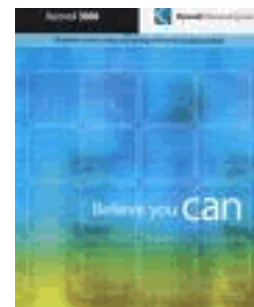
Word Prediction to support upper primary and junior secondary

- Clicker 5 with Penfriend



Word Prediction to support secondary and post secondary students

- Co:Writer
- Kurzweil 3000
- ClaroRead
- WordQ




Word Prediction to support secondary and post secondary students

- textHELP Read & Write GOLD



Word Prediction Comparison Chart

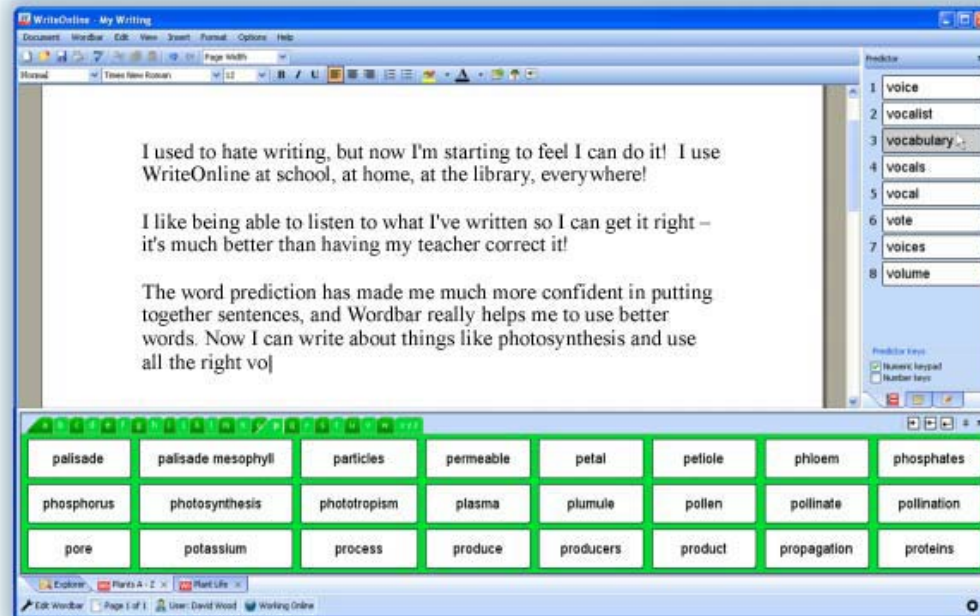
 Spectronics <small>Inclusive Learning Technologies®</small>								
Vocabulary	Texthelp Read&Write 9 Gold	Co:Writer SOLO UK Version	Kurzweil 3000 v11 for Windows	Penfriend XP Version 3	Penfriend XL Version 3	ClaroRead PLUS v5 for Windows	SoothSayer Word Prediction Version 4	WordQ2
Core Dictionaries	15	5	3	4	6	2	3	18
Basic	Y		Y			Y		
Advanced	Y							
Web	Y		Y					
Thesaurus	Y		Y			Y		
Add new words to dictionary	Y		Y					
Audible Dictionary with Sample Sentences	Y					Y		
Existing Topic Dictionaries		123						28

- <http://www.spectronicsinoz.com/article/word-prediction-software-comparison-chart>



Word Prediction to support secondary and post secondary students

- WriteOnline



WriteOnline



- Reluctant writers
- ESL Learners
- Students with language and spelling difficulties
- Students with Learning disabilities and Dyslexia
- For schools who desire an integrated writing approach and environment.



WriteOnline - Coastal Landscapes

Document Wordbar Edit View Insert Format Options Help


Normal (12pt) Times New Roman 12 B / U

Coastal Landscapes

The landscape on the coast is the result of wave action. Waves erode the coastline and transport sand, pebbles and mud. The sediment is broken down by attrition into smaller particles and moved along the coast. Cliffs, caves, arches, stacks and wave-cut platforms are caused by wave erosion. A beach is a landform caused by deposition.

Cliffs

Cliffs are common coastal features. They are formed by abrasion. The sediment carried by the waves scours the rock and makes a notch at the base of the cliff. The rocks collapse into the sea and the cliff retreats inland. Steep cliffs are formed where the rocks are hard and more resistant. Gently sloping cliffs are formed where the rock is softer and erodes more easily.



Caves

Caves are found at the base of cliffs. They form where the rock is weak, for example along joints. The joints are enlarged by erosion and form a cave. On a headland, a cave may form on both sides. As erosion continues, the caves join up and form an arch. Eventually the arch collapses and a stack is formed.

Prediction

- for
- found
- form
- four
- food
- forms
- formed
- following
- followed
- force

Keyboard Options

- ☒ Numeric keypad
- ☐ Number keys

Predic... Co... Notes

Landforms Beaches Waves Flooding Pollution Examples

abrasion	arch	bar	bay	cave	chimney
cliff	cliffs	coastline	erosion	estuary	headland
high water mark	inlet	landslides	low water mark	notch	pillars
spit	stack	strata	undercutting	wave cut platform	waves

Explorer Geography Words Landscape Features Coasts

Edit Wordbar Page 1 of 2 User: Sarah Davies Working Online



Features



- Integrated word prediction
- Integrated Wordbar for word banks and writing frames
- Analytical teacher tools
- No installation – updates are automatic – always the latest version.
- Work offline option



Portable Notetakers



Neo



Dana

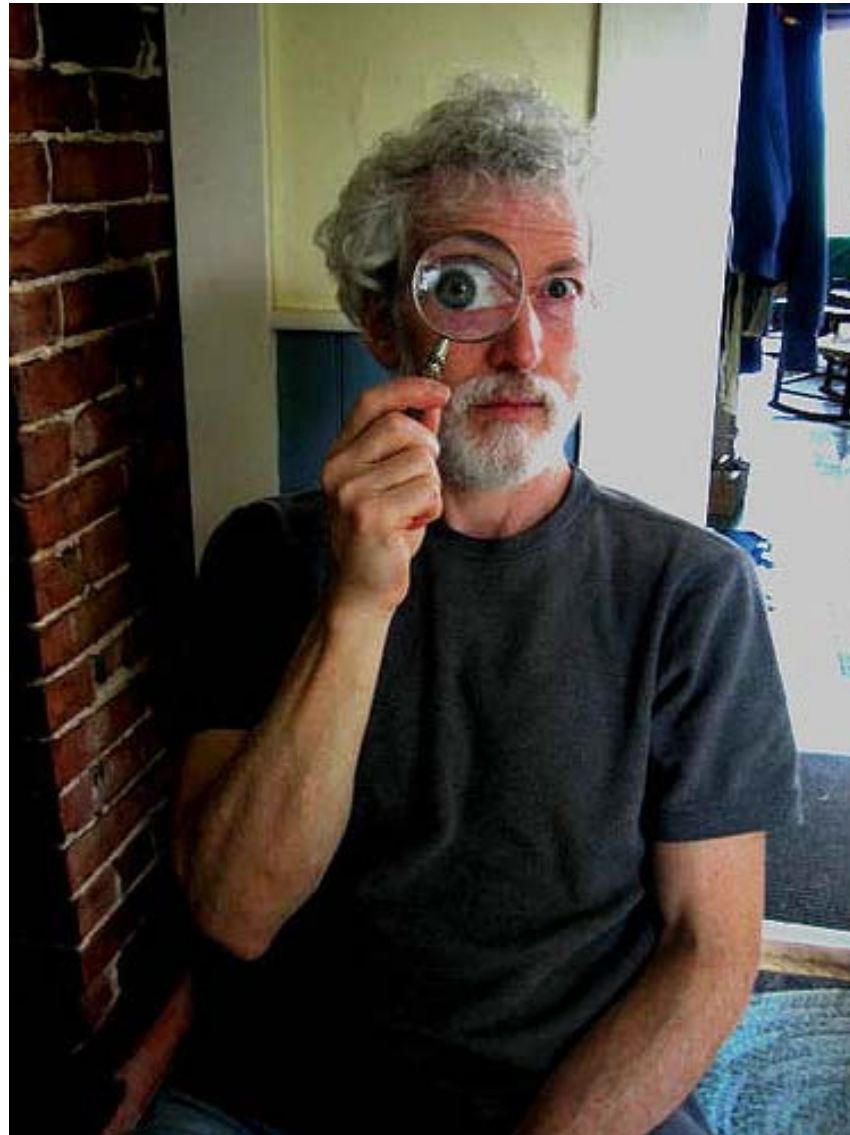


NEO2

For people who find writing with pen and paper frustrating

- helps overcome writing barriers
- encourages students to independently take notes rather than rely on a scribe or peers





The following resource web links
are found @

<http://gregoconnor.wikispaces.com>

<http://www.spectronicsinoz.com/blog>



Resources

- Abbott, C. (2007). *E-inclusion: Learning Difficulties and Digital Technologies*. Available from www.futurelab.org.uk/download/pdfs/research/lit_reviews/futurelab_review_15.pdf
- LD Online - www.ldonline.org
- Technology for Learning Disabilities Project - http://www.cwu.edu/~setc/tld/eval_outcomes.php
- Dave Edyburn Home Page provides links to research, publications and articles - www.uwm.edu/~edyburn
- Journal of Special Education Technology - www.tamcec.org/jset/index.htm



Resources

- Accessible Book Collection - www.accessiblebookcollection.org
- Bookshare - www.bookshare.org
- Project Gutenberg Online eBook resource with over 20,000 free books - http://www.gutenberg.org/wiki/Main_Page
- Daisy Books - <http://www.daisy.org>
- CITED's Learn Center showcases select resources and targeted tools to help students meet the everyday educational challenges through technology - http://www.cited.org/index.aspx?page_id=2
- Reading Software: Finding the Right Program - <http://www.readingrockets.org/article/7765>



Resources

- Assistive Technology Writing Tools -
<http://www.greatschools.net/cgi-bin/showarticle/3084>
- A blog focusing on making the curriculum accessible to all learners through the provision of assistive technologies and universal design -
<http://www.teachingeverystudent.blogspot.com>
- Accessibility features of Microsoft products -
<http://www.microsoft.com/enable>
- Broaden Your Horizons: Assistive technology benefits to students, suppliers, freeware and shareware, resource links -
http://www.imvc.com.au/broadenhorizons/index_new.asp?NavID=9&a=9&b=0



Resources

- Inclusive Technology Resource Kit (2007) - This resource includes a range of fact sheets on a wide variety of assistive technologies including organizational, research and study tools. Contact RMIT Disability Co-ordination Office <http://www.rmit.edu.au/ssg/dco> for more information.
- Hall, T., & Strangman, N. (2002). *Graphic organizers*. Wakefield, MA: National Center on Accessing the General Curriculum. Available from http://www.cast.org/publications/ncac/ncac_go.html
- CAST works to expand learning opportunities for all individuals through Universal Design for Learning - www.cast.org
- UDL Technology Toolkit - <http://udltechtoolkit.wikispaces.com>
- Universal Design for Learning Wiki - <http://udl4all.pbwiki.com>

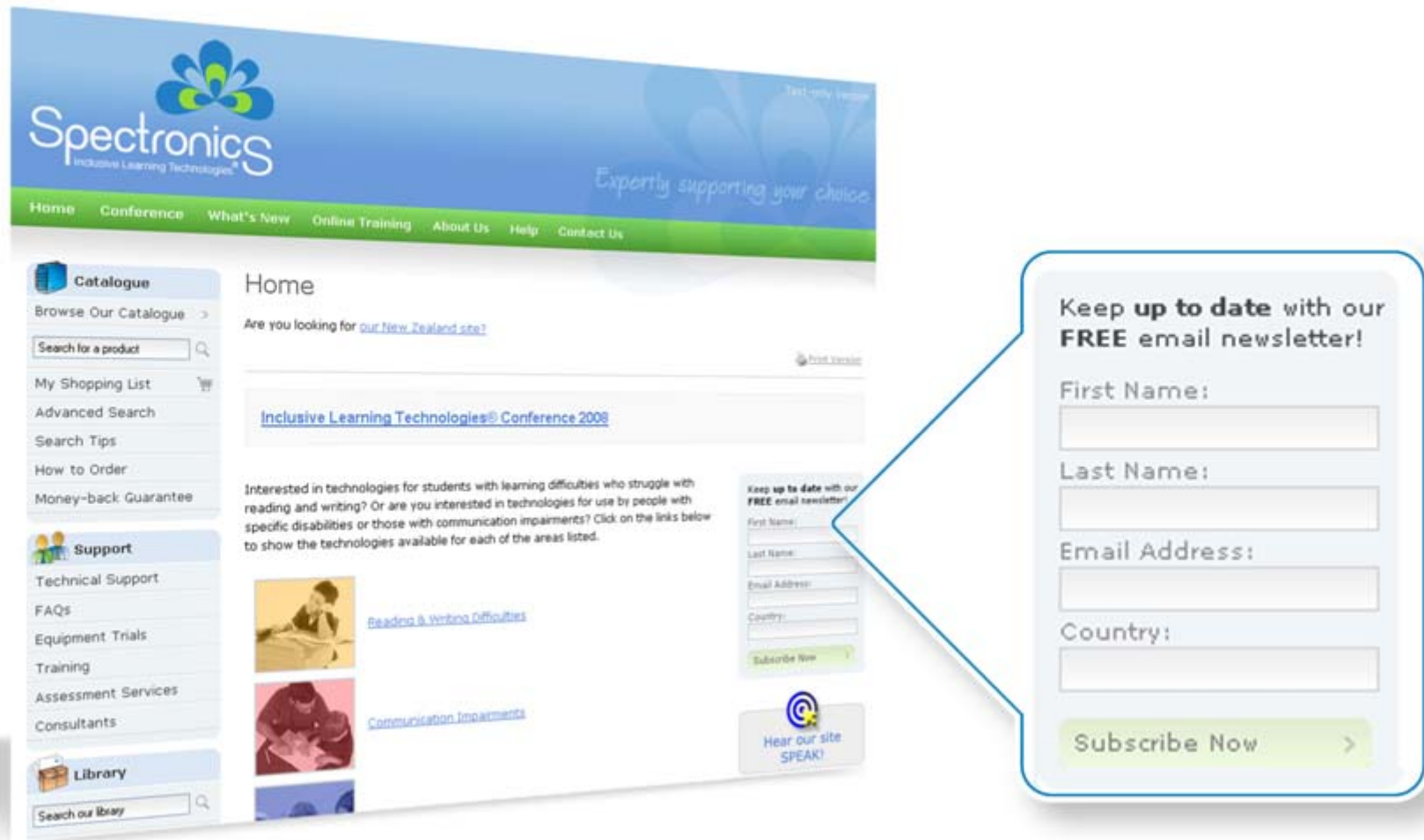


What's New

- <http://www.spectronicsinoz.com/whatsnew>
- <http://www.spectronicsinoz.com/recent>
- <http://www.uwm.edu/~edyburn/what.html>



Spectronics Free Emailed Update Service!



The image shows a screenshot of the Spectronics website. The header features the Spectronics logo and the tagline "Expertly supporting your choice". A navigation bar includes links for Home, Conference, What's New, Online Training, About Us, Help, and Contact Us. The main content area is titled "Home" and includes a link to "Inclusive Learning Technologies® Conference 2008". A sidebar on the left contains sections for "Catalogue", "Support", and "Library". A callout box on the right, connected by a blue line, contains a form for a free email newsletter subscription. The form includes fields for First Name, Last Name, Email Address, and Country, along with a "Subscribe Now" button.

Keep up to date with our FREE email newsletter!

First Name:

Last Name:

Email Address:

Country:

Subscribe Now >

www.spectronicsinoz.com





INCLUSIVE LEARNING **2010**
TECHNOLOGIES CONFERENCE

[25-28 MAY 2010]

Gold Coast, Queensland, Australia

Four days of intensive inclusive learning technologies workshops and presentations!

www.spectronicsinoz.com/conference/2010





INCLUSIVE LEARNING **2010**
TECHNOLOGIES CONFERENCE

[25-28 MAY 2010]



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Facebook

Become a fan!

You can now find the Inclusive Learning
Technologies Conference 2010 on Facebook!

<http://tinyurl.com/fb-ilt-conference2010>



INCLUSIVE LEARNING **2010** TECHNOLOGIES CONFERENCE

[25-28 MAY 2010]



E.A. Draffan

Post-Secondary Assistive
Technology Adviser - UK



Dr. Chris Abbott

Teacher and Journal of Assistive
Technologies Editor - UK



Spectronics Online Training Services!



www.spectronicsinoz.com/onlinetraining





INCLUSIVE LEARNING **2010**
TECHNOLOGIES CONFERENCE

[25-28 MAY 2010]

See you at the conference in 2010?

grego@spectronicsinoz.com

