

Using Compass and KPR Wizards to Enhance Computer Access

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Overview

- Brief Introduction
 - Computer Access Intervention Process
 - Clear Evidence, Better Solutions
- Compass Software
- Keyboard Wizard
- Pointing Wizard



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Access Intervention Process

- Goal: to find the best computer access solution for an individual's needs
- Determine client needs and goals
- Assess characteristics of client, environment, tasks
- Compare possible solutions for input & output
- Recommend & implement particular solution
- Configure for user's needs
- Measure outcomes



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Clear Evidence, Better Solutions

- Make decisions based on clear evidence related to the client
 - External or field evidence
 - Knowledge & skills of the providers
 - Individual evidence
 - Discussion with client
 - Functional skills assessment
 - Trials with potential interventions



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What is Compass?

- A software tool for AT professionals who provide computer access services
- Measures user performance in skills needed for computer interaction, such as text entry, selecting targets, navigating through menus, and switch use
- Stores and reports the results



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Main Compass Features

- Pointing Tests
 - Aim, Drag, Menu
- Text Entry Tests
 - Letter, Word, Sentence
- Switch Use Tests
 - Switch Press, Scan
- Flexibility of test set-up
- Compatible with alternative inputs & outputs
- Speed and accuracy reports



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Uses of Compass Evidence

- Identifying needs
- Justifying areas of work
 - Setting therapy & educational goals
- Choosing access solutions for input & output
- Funding support
- Measuring outcomes
- Monitoring progress (or other changes)



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Principles for Gathering Clear Evidence

- Plan Your Assessment
 - Formulate a measurable question:
 - "Does the small footprint keyboard provide better typing speed and accuracy than the standard keyboard?"
- Tailor the Tests
 - Make sure the test is assessing the right thing
 - Try to change only one factor at a time
- Run the Tests
 - Make sure the user understands the test
 - Need equivalent-but-not-identical items across subsequent tests (Compass takes care of this.)



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Compass – example #1

- High school student with cerebral palsy
- No reliable use of a single switch to access a computer or other devices
- Use Compass to compare several switch sites



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Compass – example #1

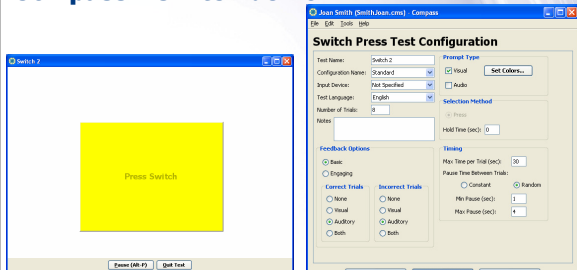
- What is the measurable question?
- Which Compass test(s) would you use?
- What factor would you change for each test?



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Compass – Switch demo



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Example #1 - Results

	Correct Trials	Avg. Trial Time (s)	Avg. Press Time (s)	Avg. Release Time (s)
Head Right	5/5	8.5	7.8	0.64
Head Left	5/5	9.0	8.5	0.57
Head Posterior	4/5	17.4	11.1	6.32
Right Hand	2/5	19.4	15.6	3.8
Right Finger	4/5	11.2	8.6	2.5



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Compass – example #2

- Selecting the best pointing device for an individual with upper extremity impairments
- Scenario?



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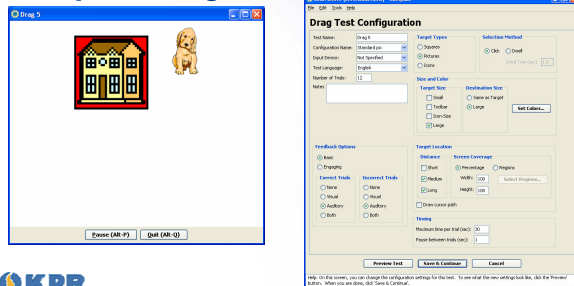
Compass – example #2

- What is the measurable question?
- Which Compass test(s) would you use?
- What factor would you change for each test?



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Compass – Drag demo



Compass Wrap-up

- Quick & easy way to get evidence to inform decision-making
- Variety of other tests available
- Lots of configuration options
- Users really appreciate seeing their results



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KPR Wizards

- Addresses the “Configure for User Needs” part of the process
- Leverage built-in Windows settings to best meet user’s needs
- Keyboard and mouse settings supported



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Built-in Windows Settings

- Keyboard
 - Repeat rate
 - Repeat delay
 - Sticky Keys
 - Slow Keys
 - Bounce Keys
- Mouse
 - Pointer Speed
 - Enhance Pointer Precision
 - Double-click Time
 - Double-click Distance
 - Object Size



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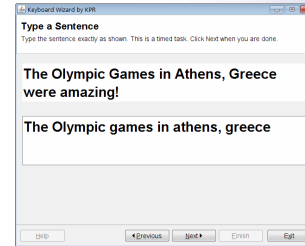
Great Features, BUT:

- Not always used effectively
- Lack of user awareness
- Requires lots of digging through Control Panels
- Not all settings can be user-adjusted
- Maintenance over time may be neglected



Keyboard Wizard Demo

- For Sticky Keys and Repeat settings



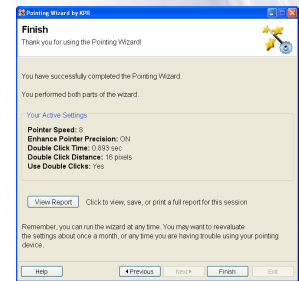
Keyboard Wizard example

- 68 y/o woman with multiple sclerosis
- Reports some difficulty with typing
- Runs through Keyboard Wizard
- Adjusting auto-repeat settings:
 - Improved typing speed 50% (from 2.2 to 3.2 wpm)
 - Reduced errors 32 pp (from 60% errors to 28%)



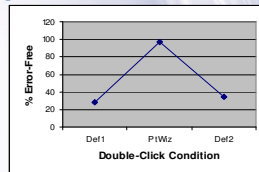
Pointing Wizard Demo

- Pointer Speed
- Enhance Pointer Precision
- Double-click Time
- Double-click Distance



Pointing Wizard example

- 57 y/o man with history of stroke
- With default double-click settings:
 - About 70% of double-clicks required multiple attempts
 - 7 or 8 attempts not uncommon
- With wizard-recommended settings
 - Only 3% of double-clicks required multiple attempts
 - Double-click distance was the most important change



Summary

- Clear Evidence, Better Solutions
- Compass: for assessment, more formal evidence-gathering
- KPR Wizards: tool for end user to leverage Windows settings effectively



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Final Words

KPR Research & Development is supported by the National Institutes of Health.

Software available at KPR via www.kpronline.com.

Compass also available through:

- Koester Performance Research
- Infogrip
- EnableMart
- Technology for Education

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