

THE ASSISTIVE TECHNOLOGY EVALUATION:
IMPLICATIONS FOR ACCOMMODATIONS

Presented By

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- 1 **The Assistive Technology Evaluation**
Implications for Accommodations
- 2 **Assistive Technology**
 - What Is It?
 - Any item, piece of equipment, or system that helps people bypass, work around or compensate for learning difficulties (Legal)
- 3 **Assistive Technology is More Than a Computer**
- 4 **Assistive Technologies Are “Accommodations”**
 - For Individuals With
 - Documented Disabilities and
 - Learning Differences
- 5 **What Technologies – In Addition To A Computer - Are Available?**
Which Ones Are Appropriate and Effective For My Child?
- 6 **“Software” Examples of Assistive Technology**
- 7 **Do They Actually Work For Individuals With Learning Disabilities?**
- 8 **Impact of Assistive Technology on Reading and Writing**
Three Studies
Middle and High School Levels
- 9 **Reading Improvement**
- 10 **Iowa Text Reader Studies 2006 -2007**
 - Impact of Use of Text Reader (Text – to-Speech) Software on Student Achievement
 - 7th and 8th Graders With IEP’s
 - Demonstrating Mild to Moderate Disabilities; and
 - Reading Goals in Area of Comprehension, Reading Fluency or Vocabulary
 - Improved Scores from the 6.9 to the 8.9 Grade Level
- 11 **Summary of Results**
 - **Fluency**: Students accessed computer passages at 160 words per minute while control group read paper text at 79 words per minute.
 - **Reading Comprehension** Improved Significantly Over Time.
- 12 **Academic Success is a Function of Many Variables.**
- 13 **Kentucky Instructional Technology for Student Success Project (ITSS) 2000 – 2001**
(Grades 6 - 12)

14 **Writing Improvement**

15 Washington State University Technology and Learning Disabilities Study
2006 – 2007 (Grades 6 – 12)

16 **How Does Assistive Technology Work For Individuals With Dyslexia?**

Two Case Studies of Writing Patterns
("Writing Rhythms")

17

18 **Client #1**

- 3 Hours of Technical Training
 - AT software orientation
- 20 Hours of Writing Skills Training
 - Using AT software
- 61 E-Mails Out (Instructor to Client)
- 33 E-Mails In (Client to Instructor)
- 1 Riot Act (By the End of the First 1/3 of the Course)
 - Reestablish Personal Responsibilities
 - Timeliness of Communications
 - Reestablish Performance Expectations
 - On Time Work Product and
 - According to Standards Specified
- Assignment #1: 10 Revisions
- Assignment #2: 10 Revisions
- Assignment #3: 14 Revisions

19

20 **Client #2**

- 10 Hours of Technical Training
 - Windows and Word Orientation
 - AT Software Orientation
- 20 Hours of Writing Skills Training
- 72 E-Mails Out (Instructor to Client)
- 40 E-Mails In (Client to Instructor)
- 2 Riot Acts
 - Reestablish Personal Responsibilities
 - Timeliness of Communications
 - Reestablish Performance Expectations
 - Work Product Quality (Following of Instructions and Standards)
 - Time on Task
- Assignment #1: 9 Revisions
- Assignment #2: 16 Revisions
- Assignment #3: 4 Revisions

21 **Common Processes**

- Writing Assessment
- Assistive Technology Evaluation
- Training in Hardware and Software
- A Competency Based Performance Objective Driven One-on-One Writing Course

– Pre-, Mid- and Postevaluation of Writing Achievement

- 22 **Why Are Writing Patterns Important?**
- 23 **Writing Patterns and SAT Scores**
 - 6 Rating Levels
- 24 **Assistive Technology and Writing**
 - Documenting the Need For Your Child
- 25 **Steps to Consider For Implementing AT**
 - Step 1: Review and Interpret Your Child's Current Documentation
 - Step 2: Connect Your Child's Needs to Specific Technologies
 - Step 3: Obtain Documentation for Accommodations in Academic, Testing and Work Environments
- 26 **Steps to Consider**
 - 1. Review and Interpret Your Current Documentation
- 27 **Types of Independent Evaluations**
 - Psychoeducational
 - Neuropsychological
 - Optometric
 - Medical Reports
 - Speech Pathology
 - Assistive Technology
 - Writing Skill Assessment
- 28 **General Indicators Suggesting the Need for Assistive Technology**
 - Reading Challenges
 - Significantly Below Grade Level Compared with Age-Matched Peers
 - Challenges Pertinent to Dyslexia
 - Visual-Spatial Difficulties
 - Phonological Processing Difficulties. Can the student Blend Phonetic Elements and Produce the Sound of the Word Accurately?
 - » Example: Woodcock Johnson III (Incomplete Words and Sound Blending)
- 29 **General Indicators Suggesting the Need for Assistive Technology**
 - Writing Challenges
 - Phonetic and Other Spelling Errors
 - Incomplete Words
 - Writing Competency is demonstrated to be below:

- Intellectual Capacity
- Verbal Fluency
 - » Speaking Vocabulary

30 General Indicators Suggesting the Need for Assistive Technology

- Other Challenges
 - Organization
- Other Learning Disabilities

31 General Indicators Suggesting the Need for Assistive Technology

- Clinicians' Recommendations
 - A Learning Approach Using Highlighting
 - A Computer for Word Processing
 - An Electronic Phonetic Spell-Checker
 - Extended Time

32 Steps to Consider

- Step 1: Review and Interpret Your Current Documentation
- Step 2: Connect Your Needs to Specific Technologies
 - The Writing Assessment and
 - The Assistive Technology Evaluation
- Step 3: Obtain Documentation for Accommodations in Academic and Testing Environments

33 Why Conduct a Writing Assessment?

- Reading Difficulties Create Writing Problems
- Reading and Writing Are
 - Symbiotic (They help each other)
 - Synergistic (They work together)
- Some of the same AT Tools are Used for Reading and Writing
- There are More Specialized Tools Available for Writing Than for Reading.

34 "Software" Examples of Assistive Technology

35 Why Conduct A Writing Assessment?

- Reading Scores Provide Limited Data and Cannot be Used Alone in Selecting Assistive Technology

36 For Individuals With Dyslexia

- Errors Occur in Patterns and
- Need to Be Identified Before:
 - Selecting, Customizing and Individualizing A Mix of Assistive Technology Tools

37 What Other Kinds of Patterns Should A Writing Assessment Identify?

- Error Patterns
 - Categories of Errors
 - Frequency of Errors
- Correct Punctuation Patterns
- Patterns of Organizing Information, If Any
- Miscellaneous Technical Errors
 - Isolated and Randomly Occurring

38

A Case Study
A Sample Writing Assessment

Using Color-Codes to Diagnose Writing Patterns

39 Next Steps:

Identify Potential Assistive Technologies to Fix Error Patterns

- 1.Count and Classify Miscellaneous Technical Problems to Establish Error Patterns
- 2.Profile the Correct Writing Patterns
- 3.Discuss with Client
- 4.Conduct Assistive Technology Trials

40

41 The Assistive Technology Evaluation Process

1. Identify and Test a Mix of Technology Tools for Improving the Reading Process and Correcting Writing Errors Patterns
2. Customize the Technologies to Individual Needs
3. Document and Prescribe Accommodations for School, Testing and/or Work Settings.

42 Identify and Test the Technology Tools for Improving the Reading Process and Correcting Writing Errors

- Four Levels:
 - Word
 - Phrase
 - Sentence
 - Paragraph
 - Composition

43 Analysis of Error Patterns

1

- Error Cluster 1 (Word Level): Word Parts
 - Missing Words
 - Missing Word Endings
 - Missing Prefixes and Suffixes
 - Incorrect Contractions
- Error Cluster 2 (Word Level): Action Words
 - Incorrect Verb Choice
 - Incorrect Tense
- Error Cluster 3 (Word Level): Spelling
 - Misspellings
 - Homophone Errors
 - Letter Reversals

2

- Error Cluster 4 (Phrase Level): Word Choice in Context
 - Awkward Phrasing
 - Incorrect Word Choice
 - Word Repetition
 - Slang
 - Unclear Word Choice
- Error Cluster 5 (Sentence Level)
 - Sentence Fragments
 - Run-On Sentences
- Error Cluster 6 (Paragraph Level)
 - Content is Generally Disorganized
 - Sentences are Unrelated
 - Paragraphs Lack Transitions
 - Paragraph Breaks Are Indistinguishable

44 An Assistive Technology Trial

Using a Software Application

45 Using Voice Playback to Correct Missing Words and Word Parts

- I just use spell check to spell correctly and I don't even know it that read that I want.

46 Using Word Prediction to Correct Missing Words and Word Parts

- I just use spell check to spell correctly and I don't even know it that read that I want

47 Word Prediction

- An Algorithm: A Mathematical Formula
 - It Predicts the Most Frequently Used Word Pairs and Triplets
- Requires Some Phonetic Spelling Ability
 - Spelling of the first two to three letters of a word.
- Learns
 - Word Patterns of the User
 - Word Lists
 - Words Scanned From Documents
 - Words From Web Pages

48 Word Prediction

- Eliminates Hesitation Over Spelling
- Can Assist With Challenges in Word Retrieval

49 Using Voice Playback to Correct Incorrect Verb Forms

- Even time I would has to write an essay or a note for the postman I would have a hard time. This essay take so much out of me.

50 Using Word Prediction and the Dictionary to Correct Incorrect Verb Forms

- Even time I would has to write an essay or a note for the postman I would have a hard time. This essay take so much out of me.

- 51 Using Dictionary and The Word Wizard to Correct Inadequate Word Choice
- I feel stress on this new program.
- 52 Using an Internet Thesaurus to Reduce Word Repetition
- Stress
- 53 Spelling Issues
- Use Word Prediction
 - Select the Word and click on Word Wizard or the Dictionary
 - Copy and Paste It In Your Document
 - Hear the Spelling
 - Spell Aloud
 - Spelling Helper
 - Turn It On or Off
 - Homophone Errors
- 54 Spelling Helper and Spell Aloud Demonstration
- 55 Homophones
- 56 Improvement in Sentence Structure Results from Using a Mix of Assistive Technology Tools
- 57 Organization
- 58 The Assistive Technology Evaluation Process
1. Identify and Test a Mix of Technology Tools for Improving the Reading Process and Correcting Writing Errors Patterns
 2. Customize the Technologies to Individual Needs
 3. Document and Prescribe Accommodations for School, Testing and/or Work Settings.
- 59 AT Individualization
- Customized Options
- 60

Options for Customizing Software To Individual Needs

- Word Prediction
 - Speak the Words Before Selection and As They Are Typed
 - Spell Check and Learn the Words as They are Typed
 - Learn Word Lists and Vocabulary Patterns from a plain text file or the computer's clipboard
- Spell Checking
 - Add and Delete Words
 - Add a List
 - Automatic Corrections to Student's Commonly Misspelled Words
 - Customized List of Phonetic Replacements
 - Spelling Error Log

61

Options for Customizing Software To Individual Needs

- Voice Playback
 - Change the Voice
 - Read by Word, Sentence or Paragraph
 - Speak As I Type
 - Speak With One Word Displays
 - Speak With Highlighting
 - Change Colors

62

Evaluating The Efficacy of an AT Tool

- Include the Student in the Selection Process
- Start With the Learning Profile
 - Specific Difficulties
 - Strengths, Preferences, Comfort Level
- Determine Goals and Plans
- Consider Portability
- Select Compatible Technologies
- Foster Independence

63

Evaluating The Efficacy of an AT Tool

- What Types of Error Does It Correct?
- How Many Errors Does It Correct?
- Is The Tool Adaptable to Individual Needs?
 - Can It Be Customized?
- How Effectively Is the Person Interacting With the Tool?
- Are Other Prerequisites for Technology Training Needed?

64

Other Possible Prerequisites in Technology Training

- Document Preparation On The Computer
 - Opening and Saving a New Document
 - Formatting a Document
 - Filing A Document
 - Renaming a Document
 - Organizing Computer Files
 - Sending an E-mail with an Attachment
- Keyboarding and Mouse Control
- Accessing Diverse Information Sources

- 65 **Accessing Diverse Information Sources**
- Scanning a Document to be Read by the Computer
 - Reading and Creating A PDF Document
 - Using the Internet for Conducting Research
 - Organizing the Information
 - Reading Books On-Line
- 66 **Other Non-Technology Needs Requiring Accommodations**
- Testing Conditions
 - Extended Time
 - Testing in Intervals
 - Alone or in a Group
- 67 **Steps to Consider**
- Step 1: Review and Interpret Your Current Documentation
 - Step 2: Connect Your Needs to Specific Technologies
 - Step 3: Determine Documentation Needs for Accommodations in Academic, Testing and Work Environments
- 68 **Documentation Components**
1. Writing Assessment
 2. Assistive Technology Evaluation
 3. Recommendations for Accommodations
- 69 **What's Happening In New York State?**
- Regents Exam Accommodations Can Include:
 - Assistive Technologies Such As Text Reader, Speech-to-Text, and Word Prediction Software; and Phonetic Spell Checkers provided...
 - It is on the IEP.
- 70 **Assistive Technologies As Accommodations in High Stakes Tests**
- Student Should Be Well Practiced in Using the Technologies In Untimed and Timed Situations
 - Classroom Learning
 - School Tests
 - Homework Assignments
- 71 **Parent Advocacy vs. Self-Advocacy and the Law**
- 72 **The Laws**
- Upon Graduation From High School:
 - IDEA and FAPE No Longer Apply
 - The IEP No Longer Mandates That Any One Will Do Anything

- The IEP is No Longer a Legal Document
- Section 504 of the Rehabilitation Act of 1973 Comes Into Play
- FERPA Prevents Parents From Talking to Colleges About Accommodations

73  **Building Self-Advocacy Skills**

- Regular and Systematic Use of Assistive Technology in
 - Classroom,
 - Homework and
 - Testing Situations
- Enables A Child to Take Control and Self-Advocate
 - To Talk About the Issues, Explain the Problems, and Describe Accommodations Needed.