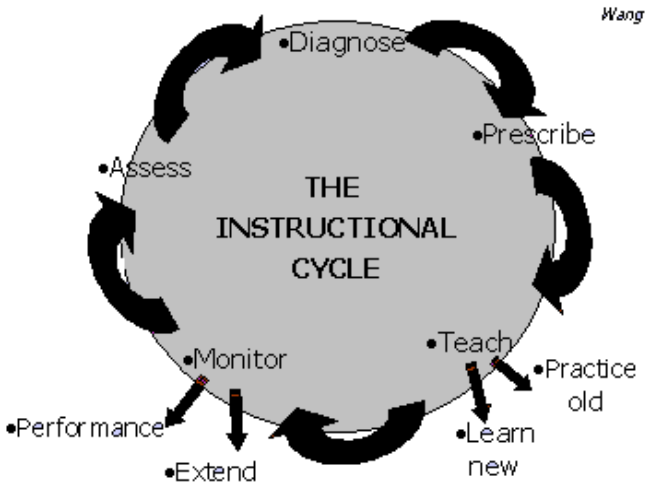
Access for All - Integrating Technology into the Curriculum

Curriculum Impacts on A.T.

Universal Design in Curriculum Development

Provide Flexible Means of Representation
Provide Flexible Means of Expression
Provide Flexible Means of Engagement



Lesson Planning (Edyburn – www.setp.net)

- Reason for Lesson
- Learning Standards addressed in lesson
- List what students will learn
  - ALL students
  - Most students
  - Some students
- Resources
- Activities
- Assessment of skill/knowledge acquisition
- Modifications

Preparing Supports (Calculator)

- Let the curriculum be your guide.
- What will the class be doing?
  - Materials
  - Homework
  - Tests
  - Projects
- How can the student participate?
- Which IEP objectives can be addressed?
- What support(s) is needed?

Specially Designed Instruction

- Material Modifications
- Presentation Modifications
- Instructional Modifications
- Management Modifications
- Content Modifications
- Grouping Modifications
- Physical & Environmental Modifications
- Assessment Modifications

Levels of Support (Kronberg)

Adaptations

- Any adjustments that are made in order to enhance a person's ability to successfully participate in an activity
- Temporary or permanent
- Maximize student participation & interaction
- Can be useful across environments

Accommodations

- An alteration to an instructional task
- An alteration to the administration of an assessment
- Maintains the integrity of what the task or assessment is designed to measure
- Based on student need

Modifications

- An alteration in the task or test/assessment
- Substantially changes the integrity of what is being performed or measured
- The "standard" is in some way significantly changed

Assistive Technology System Selection & Implementation Planning

Types of Adaptations, Accommodations & Modifications:

People
- With adult
  - volunteer
  - para-educator
- With peer
  - Classmate, older student
  - student club

Materials
- adapting
- substituting
- adding

Expectations
- priority goals
- quantity of work
- demonstration of learning

Feature Matching in A. T. Selection

Feature Matching

The Student/Person
- **Abilities** – What are their strengths in the areas of senses, cognition, language & motor?
- **Needs** – How do they learn best? Visual, auditory, both?
- **Expectations** – What level of participation is expected during this activity?

The Technology
- **Input** – What are the access options?
- **Processing** – What does the layout look like? Are there rate enhancements?
- **Output** – Do I want to produce text or produce pictures? Are there speech options?
- **Other properties** – OS? Cost? Support? Ease?

Student Impacts on A.T.

The SETT Framework (www.JoyZabala.com) Student, Environment, Task, Tools
- Which students need Assistive Technology?
- What kind of technology is needed?
- Who is involved in making these decisions?
- What sort of data should the multidisciplinary team gather to aid in the decision making process?

Student issues:
- What is the functional area(s) of concern? What does the student need to be able to do that is difficult or impossible to do independently at this time?
- Special needs (related to area of concern)
- Current abilities (related to area of concern)

Environmental considerations:
- Arrangement (instructional, physical)
- Support (available to both the student and the staff)
- Materials and Equipment (commonly used by others in the environments)
- Access Issues (technological, physical, instructional)
- Attitudes and Expectations (staff, family, others)

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Participation Model (Buekleman & Mirenda) – an assessment framework

1. Identify Participation Patterns and Needs

- Conduct activity/standards inventory
- Assess participation pattern of peers
- Assess participation of target student (see chart below)
- Identify participation barriers

ACADEMIC		SOCIAL	
☐	Competitive	☐	Competitive
☐	Active	☐	Active
☐	Involved	☐	Involved
☐	None	☐	None
REGULAR EDUCATION		**INDEPENDENCE**	
☐	Full	☐	Complete
☐	Selective	☐	With Setup
☐	None	☐	Assisted

2. Assess Opportunity Barriers

- Policy
- Practice
- Attitude
- Knowledge
- Skill

3. Opportunity Interventions

4. Assess Access Barriers

- Natural Abilities
- Environmental Adaptations
- Utilization of Systems / Devices
  - Operational Requirements Profile
  - Constraints Profile
  - Capability Profile
    - Motor
    - Cognitive / Linguistic
    - Literacy
    - Sensory / Perceptual

5. Plan and Implement Interventions for Today and Tomorrow

- Provide Instruction
- Natural Contexts
- Specific Skills
- Partner and Facilitator Training

6. Evaluate Intervention Effectiveness: Is the Student Participating at expected levels?

- No - why not? Go Back to Identify Participation Barriers
- Yes - Continue to follow up on student's needs
- remember to adjust and reevaluate as student's needs change

Access for All - Integrating Technology into the Curriculum

Tasks

- What SPECIFIC tasks occur in the student's natural environments that enable progress toward mastery of IEP goals and objectives?
- What SPECIFIC tasks are required for active involvement in identified environments? (related to communication, instruction, participation, productivity, environmental control)

Tasks/Functions in Schools: Reading, Writing, Drawing, Note-taking, Organizing Time/Materials, Computing, Problem Solving, Manipulating Materials, Social Participation, Speaking, Presenting, Listening, Comprehension of Curriculum Content

Tasks of Language Arts & English

- Independent Reading
- Phonics/Decoding
- Sight Word Recognition
- Vocabulary Building
- Reading Comprehension
- Handwriting
- Writing Composition
- Manipulating Books

Tasks of Math

- Reading
- Computation
- Comparison
- Measuring
- Problem Solving
- Time
- Writing
- Drawing

Tasks of Social Studies & History

- Reading Comprehension
- Test Taking
- Presentations
- Writing/Reports
- Studying
- Map Reading

Tasks of Science

- Reading Comprehension
- Experiments
- Reports
- Test Taking
- Problem Solving
- Diagram Reading

Tasks of the Arts

- Drawing
- Play/Dramatic Acting
- Singing
- Manipulating Instruments

Tasks of Physical Education

- Playing
- Jumping
- Throwing
- Riding
- Climbing
- Scoring

General Tasks of School

Organizing

- Books & Materials
- Homework
- Projects
- Schedules

Social

- Behavior in Class/Halls
- Following Rules
- Appropriate Communication
- Social Interaction

Tools

Types of Assistive Technology Tools for Reading

- Color Filters
- Highlighting
- Reading Guides
- Text to Symbol Processors
- Electronic Books
- Text Scanning & Readers
- Talking Word Processors
- Spelling Checkers
- Low Tech Communication Devices
- Tape Recorders

Types of Assistive Technology for Writing

- Supports for Handwriting
- Portable Word Processors
- Talking Word Processors
- Dictation/Voice Recognition
- Word Prediction
- Outliners/Graphic Mapping
- OnScreen Keyboards with words or pictures that produce text
- Spelling Checkers
- Grammar Support
- Multi-media Software

Note Taking in all Subjects

Lo Tech

- Writing from Outlines
- Highlight Written Text
- Tape Recording
- Note Buddy Copying or Carbon

Hi Tech

- Portable Word Processors
- Abbreviation Expansion
- Templates
- Voice Recognition

Types of Assistive Technology for Math

- Counting Aids
- Problem Guides
- Calculators
- Electronic Worksheets
- Text Readers
- Measuring Aids
- Money Aids
- Time Aids

Types of Assistive Technology for Social Studies / Histories

- Text Readers
- Portable Word Processors
- Electronic Sources of Research
- Keyboards of Words or Pictures that produce Text
- Talking Word Processors
- Word Prediction
- Multi-media Software
- Outliners/Graphic Mapping
- Dictation
- Switch Activated Products

Access for All - Integrating Technology into the Curriculum

Types of Assistive Technology for the Sciences

- Portable Word Processors
- Electronic Sources of Research
- OnScreen Keyboards of Words or Pictures that produce Text
- Text Readers
- Multi-media Software
- Electronic Lab Reports
- Outliners/Graphic Mapping
- Dictation
- Switch Activated Products

Types of Assistive Technology for the Arts

- Paint/Draw Software
- Music Scoring Software
- Switch Activated Instruments
- Electronic Sources of Art Work
- Multi-media Software

Types of Assistive Technology for Organizing

- Word Processors for creating lists
- Symbol Maker Programs for creating schedules, calendars & checklists
- Sequencing Devices for repeated task lists
- Project Management Software

Types of Assistive Technology for Social

- Symbol Maker Programs for creating behavior reminders
- Clocks/Time Related Products

Types of Assistive Technology for Manipulating Materials

- Switch Activated Toys/Class Materials
- Multi-Media Software Programs that manipulate onscreen items
- Scan Arrays for Content Area Writing/Drawing

Revise/Refine Feature Match Choices

- Identify features for consideration
- Identify ways to mock-up or try out needed features
- Don't forget low tech options/back-up
- Explore training opportunities
  - Manufacturer's trainings
  - Regional AT trainings

A.T. Mockup & Trial Periods

- Choose several items to trial (no less than 2)
- Prioritize according to:
  - maximum features
  - student preference
  - training needs
  - availability
- Decide upon a game plan including:
  - Timelines
  - Targeted activities for trial
  - team responsibilities
- Explore environmental considerations

Plan the Trial (*www.wati.org)*

1. Choose an Environment
2. Choose the Task
3. Choose Possible Tool Solutions
4. Decide upon Measurables
5. Try out Tools
6. Collect Data
7. Review Data
8. Team Makes Decisions
9. Plan for Implementation

Making Decisions

- Review Data Collection
- Revisit Initial Goals
- Come to Consensus

Implementation Planning

As Student Waits for the System to Arrive...

- Review desired outcomes
- Determine initial environments for system use
- Develop back-up systems
- Brainstorm physical management of the system
- Read & research best practices

As Student Begins to Use the System...

- Review training information/manuals
- Participate in trainings
- Problem solve difficulties
- Monitor team member involvement
- Document

As Student Uses the System...

- Re-assess team responsibilities
- Re-evaluate student's daily needs
- Foster administrative support
- Problem solve difficulties
- Continue monitoring and modifying
- Use resources & references
- Prepare for life transitions
- Document, document, document

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Sharing the Work throughout the Team

Roles & Responsibilities Matrix *(Gary Cumley, described in Buekleman & Mirenda)*

- Create a list of responsibilities for the curriculum and technology
- Create columns of team members
- Each responsibility should be assigned a member and a backup

R**ESOURCES**

Assistive Technology Implementation Resources:

- Bedrosian, J.L. (1999). Efficacy research issues in AAC: Interactive storybook reading. AAC: *Augmentative and Alternative Communication.*15 (1), pp45-55.
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- Woodward, J., & Cuban, L., eds. (2001). Technology, curriculum and professional development: Adapting schools to meet the needs of students with disabilities. Corwin Press: Thousand Oaks, CA.