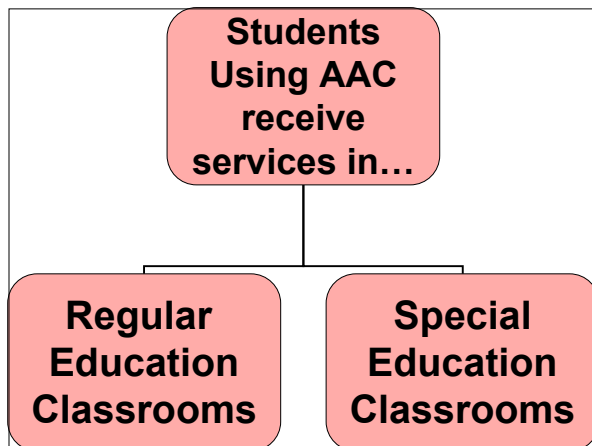


Aided Language Stimulation and the Descriptive Teaching Model

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AAC with Students in Regular Education Classes

- Assets
 - Most students included in mainstream have personal AAC systems
 - Many students have personal classroom assistants, as needed
- Challenges
 - Personal assistants
 - Impact of Technology
 - Teacher Training

Technology's Impact

- Differences emphasized over similarities in student needs
- Time constraints due to pace in classrooms
 - Priorities on "quick & easy"
 - Therapy time spent programming instead of supporting language
- Poor language and academic performance
 - Limited generalization and de-contextualization of language
 - Limited participation in the learning process
- Technology intimidation that results in reduced interaction between student and teacher
 - Lack of coaching & modeling by teachers
 - Uncertainty as to influence/role of assistants

Teacher Training

- Teachers are taught how to....
 - Implement curriculum materials using various teaching strategies
 - Focus on critical concepts & vocabulary as identified in the curriculum materials
 - Teach in consideration of state curriculum and testing standards

Teacher Training (cont.)

- Taught to get fluid, up-to-date information about what their students are learning (review) or have learned (test)
 - Use self-made or curriculum-based review and test materials
 - One word, response-oriented questions are asked - content words are the answers to these questions
 - Academic = Where is the Iditarod held?
 - Critical thinking questions are asked to probe deeper into the student's learning – require more than a one word response
 - Academic = Why would a musher want to use an experienced lead dog?

Teacher Style and AAC Users

- **Referential Style**
 - Requires access to an ever expanding body of content vocabulary for quick, word responses
 - Requires the least amount of critical thinking or language production by the student
 - Puts the highest memory demand on AAC users with the least pay-off in learning or language development
- **Descriptive or Critical Thinking Style**
 - Requires access to a body of high frequency, reusable vocabulary for longer, descriptive answers
 - Requires more integration of the information (Bloom's Taxonomy of Learning)
 - Allows the student using AAC to focus on the information in the lesson and not on learning new pages and symbols

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Descriptive Teaching Model

- An alternative approach for helping students using AAC to participate actively within regular (and special) education classrooms
- An approach that builds on 2 pillars for teacher success
 - Changing expectations of teachers
 - Improving teacher's ability to help
- An approach that uses the "constructivist" approach to teaching and learning

Constructivism

Learning is the result of "mental construction." Students learn (construct knowledge) by fitting NEW information together with what they already know, not by passively receiving instruction and repeating ideas.

Application to AAC

- What does the student already have available and is learning/knows?
 - Critical words already in the device
- What "new information" is being taught?
 - Vocabulary words and concepts introduced in the lesson
- Constructivist Approach = Instead of programming more and more words into the AAC device for vocabulary in the lessons, the student communicates those new ideas with high frequency, re-usable words already in his/her vocabulary system.

Requirements to do the DTM

- Have 50 - 350 permanently available, appropriate, high frequency, re-usable words and word variations in the student's AAC system (MCB or devices)
 - core vocabulary (purely selected based on frequency of use) + semantically and/or linguistically useful words and word altering strategies = Critical Words
 - go to www.vantatenhove.com for a vocabulary list
- Learn to use visual teaching strategies and support materials that make the process EASY

Visual Teaching Strategies and Support Materials

"When I in school, I no seen anyone like me. My teacher not knows what in machine and she not talk me. I uses old board her and she know what do it. She talk me on board. She wait me. I make miss take and she help fix it. It help me learn talks better." – Duncan

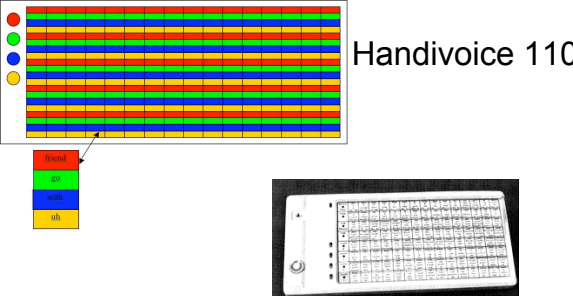
Historical context = approximately 1980



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Handivoice 110

- Color coded levels
- 373 printed words and 16 short phrases
- Phonemes, not letters

The image shows a large grid of colored boxes (Handivoice 110) and a keyboard with a communication board overlay. A legend on the left shows color-coded boxes for phonemes: red for /m/, green for /n/, blue for /p/, and yellow for /b/.

Visual Strategies and Materials

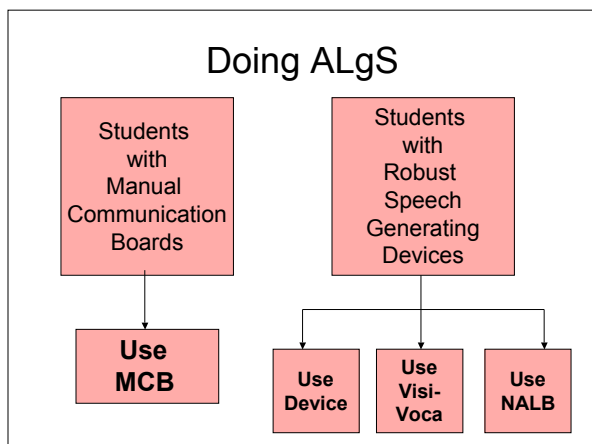
- Strategies
 - Modeled language for the person using the AAC system (Aided Language Stimulation)
 - Prompting strategies
 - Response strategies
- Materials
 - Manual communication board
 - “At-A-Glance” displays of the critical vocabulary

Aided Language Stimulation

- Called by different names
 - Partner-Augmented Input (PAI)
 - Natural Aided Language (NAL)
 - Aided Language Input (ALI)
 - Aided Language Stimulation (ALgS)
- Promoted by different people
 - Goossens', Crain, & Elder (1992)
 - Romski & Sevcik (1996)
 - Cafiero (1998)

Contemporary Research on ALgS

- Augmentative Communication News (Summaries)
 - Sept 2006 (Vol 18, Number 3) – 16 pages of info on ALgS
 - Go to www.augcominc.com
 - Single copy issue = \$20
- Shakila Dada (2004 – U of Pretoria, South Africa)
 - It is useful for teaching receptive vocabulary
- Cathy Binger (2004 – Penn State)
 - It is useful for teaching basic syntax (2 and 3 part utterances)
- Shelley Lund (2003 – Penn State, U of WI-Milw.)
 - It is useful for teaching morphology



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Principles of ALgS

- Model maximum language possible and necessary without overwhelming the student
 - 1 or 2 words beyond current language output level
 - Based on target vocabulary, language level, or target concepts in the lesson
- Model at a rate SLOW enough for student to observe vocabulary selections, word combinations, and codes or navigational sequences
- Pair with speech as needed
- Utilize in parallel with Prompt and Response strategies

Prompt Strategies

- Expectant Delay (a comprehensive strategy)
 - Watch & Wait for 10 – 15 seconds
- Open-Ended Prompts (with expectant delay)
 - Broad Prompt = “Tell me about him (the lead dog) (Watch & Wait)
 - Focused Prompt = “Why does he need to be experienced?” (Watch & Wait)
- Coached Prompts (with expectant delay)
 - “Idea” Prompt = “Tell me either where he is or what he does? (Watch & Wait)
 - “Word Option” Prompts = “Let’s look at some words you can say with your board and see if you can tell me about the lead dog using one of them. Let’s start with Action Words.”

Response Strategies

- Expand
 - The student says “know” and you model “knows where (to) go”
- Connect
 - The student says “know, “ you model “because” hoping the student will add “go before”
- Correct (order, ending, word choice)
 - The student says “where know go” and you model “know where go”

Outcomes with Device-Based ALgS

- How many models of a word, using the person’s own device, have I provided before I started seeing the person use that word later on by him/herself?
 - Van Tatenhove (2006) – Using Language Activity Monitor (LAM) data
 - Range of 50 to 100 models (2 included students)
 - Range of 100 to 125 model (3 MR/DD adults)
 - Casey (2008) – LAM data
 - Range of 100 – 120 models (1 MR/DD adult)

Outcomes with Visi-Voca Based ALgS

- How many models of a word, using the client’s Visi-Voca, have I provided before I started seeing the person use that word later on by him/herself?
 - Van Tatenhove (2007) Logs and LAM Reviews
 - Client (27 year old literate male, CP with Pathfinder with U128 with U128 Visi-Voca)
 - Answer = Range of 75 to 150 models
 - Client (30 year old woman, Down Syndrome and CP with Pathfinder)
 - Answer = Range of 100 - 200 models

Aided Language Stimulation with Descriptive Teaching

How do you combine these two strategies?

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Step 1: Current Teaching Routine

- Observe the classroom for at least 1 day
- Log % of referential vs. descriptive styles used in oral activities
 - with normally developing students
 - with student using AAC
- Note communication partner skills
 - timing (expectant delay, pace, etc.)
 - prompting strategies
 - response strategies
- Note roles of teacher, therapists, assistant, peers

Step 1: Current Teaching Routine (cont.)

- Review written materials
 - types (paper, computer)
 - modification strategies used/needed
 - to access the materials
 - to be more “linguistic” in demonstrating knowledge
- Understand school policies and current practices to support inclusion
 - Participation Model (Miranda and Beukelman)
 - SETT (Zabala)

Step 2: Demonstrate the Model

- Have the teacher select a lesson on which he/she is currently working
- List the key content vocabulary of that lesson
- Determine what words are or are not already in the AAC device
 - Look at Wall Chart of critical Words (Natural Aided Language Board)
 - Look in Manual
 - Look up with Icon Tutor
- Determine how to handle the “not in” words

Example Lesson Selected

- From Sunshine State Standards, Grades K-2 Science
 - Strand 1: The Nature of Matter**
- Benchmark 1: The student knows that objects can be described, classified, and compared by their composition and physical properties
 - K = knows objects have different properties
 - 1st = knows objects can be grouped by properties

Key Content Vocabulary Listed

- Observable properties
 - Color (full range of color words)
 - Shapes (full range of shape words)
 - Form (flexible, stiff, straight, curved)
 - Texture (rough, smooth, hard, soft)
 - Size/Weight (big, little, heavy, light, thin, long, short)
- Different states and effects of heating or cooling
 - Solid, liquid, gas
 - Freeze, melt, evaporate

Key Content Vocabulary Already In AAC Device & **NOT IN**

- **Observable properties**
 - **Color (full range of color words)**
 - **Shapes (full range of shape words)**
 - **Form (flexible, stiff, *straight*, *curved*)**
 - **Texture (*rough*, *smooth*, *hard*, *soft*)**
 - **Size/Weight (*big*, *little*, *heavy*, *light*, *thin*, *long*, *short*)**
- **Different states and effects of heating & cooling**
 - **Solid, liquid, gas**
 - **Freeze, melt, evaporate**

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Teacher Vocabulary Decisions

- Words said mostly by the teacher
 - “Observable,” “properties,” “effects”
 - Will be defined descriptively during teaching
- Words said by student
 - “Size” = very “critical” & will be programmed in the device
 - The remainder of the words
 - Re-define using words from the NALB
 - Use word altering strategies from the NALB
 - Use temporary solutions

Re-define with critical Words

- Form = way something looks because of way it is put together
- Flexible = easy to move
- Stiff = hard to move
- Curved = go more than 1 way, go this way and that way
- Texture = look or feel of something
- Solid = keeps shape, hard all the way through
- Liquid = move easily, but not in all space
- Gas = move easily to take up all space
- Evaporate = change and go away

Words NOT in Device

- Temporary solutions
 - On quick & dirty topical manual boards
 - On sticky notes
 - On NALB written in erase-able marker in “short term parking” section of the board
- Word Altering strategies

same as	opposite of
part of	join words
starts with	sounds like
add to end	add to front
same group/family	part of speech

Coping with Teacher Freak-Out

- “These ‘definitions’ are too long for my student to say. He/she only talks with one or two words. Even if he/she could do this, it would take forever to get an answer.”
 - How much does the student need to say to show you he/she has grasped the concept?
 - Form = way something looks because of way it is put together
 - acceptable examples: look, way look, how look and made
 - How can you balance this approach with the current ways you are reviewing and testing knowledge?

Step 3: Train on the NALB

- Don’t assume the chart is self-explanatory
- Call it something that is familiar to the teacher (e.g., “Word Wall,” “At-A-Glance” Vocabulary Chart)
- Explain how the chart provides the “code” to the words in the machine

Step 3: Train on the NALB (cont.)

- Show how the words are organized
 - by Part of Speech (with color coding)
 - Alphabetical order (except for people words)
 - Interrogatives in the “word group” that answers the question
 - Blank spaces to add more words
 - “Short term” parking at the bottom for temporary words
- Practice finding words

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Step 4: Organize Lessons

- Provide a structure for helping the teacher “organize” a lesson with the new approach
 - Coordinates with current “lesson plan” strategies
 - Helps the teacher think in terms of Descriptive Teaching-Talking-Testing instead of Referential Teaching-Talking-Testing
- Show the teacher “lessons” organized by other teachers
- Offer the use of a pre-developed Lesson Planning form, if needed

Subject Area: Science, The Nature of Matter	
Textbook/Material Information: Sunshine State Standards - Strand 1, Benchmark 1	
Curriculum Goal: The student knows that objects can be described, classified, and compared by their composition and physical properties	
Other: knows objects have different properties, can be grouped by properties	
Date Developed: 9-21-07	By: Ms. Martin
Key Concepts of the Lesson <ol style="list-style-type: none"> 1. Color words 2. Shape words 3. Form words 4. Texture words 5. Size/Weight words 6. Effects of Heating and Cooling 	

Content Words/Vocabulary			
Word/Concept	Need to say? Y/N	In/Added/Defined/Temp/WAS	critical Definition/WAS
color words	YES	all in	(see RAINBOW)
shape words	YES	all in	(see TRIANGLE)
texture words	YES	all in	(see FINGER)
size/weight words	YES	all in, but “size” - ADD	(see ELEPHANT, DICE)
form words	YES	only “straight”; define/WAS others	flexible = easy to move stiff = hard to move
			curve = go this way, that way, OPPOSITE OF straight
solid	YES	define	hard all the way through
liquid	YES	define	move easily, but not in all space
gas	YES	define	move easily to take up all space
evaporate	YES	define and TEMPORARY	change and go away

Teaching/Testing Plans			
Learning Activities	ALGS Provided	Support Materials	Evaluation
Given a set of objects of different color and shape properties - sort and describe them, sort at least 2 different ways	Demonstrate classifying of words. Model “these” “all” “color/shape.” “They” “all” “same” and “go” “together.”	Objects and NALB	Will describe the characteristics of the different sets created with color and/or shape words. Ask “why did you put these together?” Accept: all same, colors words, shape words
Given a set of objects with different textures, sizes, and weights, compare the various objects and describe.	Demonstrate and describe. Model “this” and “that,” “feel” and “er” and “est” endings. Use “hot” and “opposite” to discuss comparative concepts.	Objects and NALB	Will compare at least 3 pairs of objects. Will be asked to identify the comparative objects in 2 ways. (1) Point at “Which one is?” (2) Describe when asked “Tell me about this one and this one.” (big/bigger, feel soft)
Do a simple science experiment with water - liquid state, frozen state, steam/gas state.	Model “hot,” “cold,” “very cold,” “hard,” “move easy,” “more hard” and “change” to describe the conditions.	NALB	Tell me what you need to do to make it hard. (cold) Tell me what you need to do to make steam. (hot) Accept: make hot, make cold, very hot, very cold
Complete worksheet.	None - Work independently with aide	Modified Worksheet - adjust to 3 questions with answers of 1 - 2 critical words. NALB at work station.	Use computer version of worksheet. Check worksheet and grade.

Possible Challenges

- Multiple kinds of AAC devices and/or programs used in a classroom with multiple kinds of picture representations
 - Use 1 main critical vocabulary board for teacher to teach and test with the available vocabulary (no pictures) and personal boards by the students’ desks (with pictures)
- Teachers moving around the room
 - Make NALB as a free-standing or portable board
 - Make several NALBs to post around the room
- Lots of “independent” or small group working time
 - Create “stations” with NALB posted
 - Use peer helpers

Are teachers really doing this?

- Teachers and class levels
 - Regular education more frequently than special education teachers
 - Preschool and elementary more than middle or high school teachers
- Initially doing planning forms for selected activities and lessons
 - 1 to 10 plans with support of SLP
 - Begin to implement DTM without pre-planning after 3 to 4 months of consistent use
- Visual support materials
 - Using mostly NALB
 - Little time for anyone to modify more materials

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Teacher Reported Subjective Outcomes of Descriptive Model

- **Teacher Outcomes**
 - Slows down speech rate & shortens sentence length
 - Emphasizes gaps in critical vocabulary when rehearse and do lesson
 - Builds natural support networks
 - Helps other students in the class with learning challenges
- **AAC Student Outcomes**
 - More active learners
 - Testing results are higher and more reliable
 - Improvements in reading/writing skills
 - Increases in multiple word production in AAC device

Objective Data of DTM

- Language Activity Monitor samples taken over the school year on 3 students with high tech devices
 - Student 1: Vantage with Unity45, 1st grade
 - Student 2: Vanguard with Unity84, 2nd grade
 - Student 3: Pathfinder with Unity128, 5th grade
- Each student tracked on 100 key vocabulary words and length of utterances used in spontaneous, self-generated communication collected from a sample of 2 weeks use of the device
 - No specific therapy done on these 100 words

Vocabulary Use & Sentence Length

- **Student 1: U45 Sequenced in VT**
 - Using 12/100 key words in August 2007
 - Using 74/100 key words in April 2008
 - MLU-M increased from 2.30 to 4.37
- **Student 2: U84 Sequenced in VG**
 - Using 33/100 key words in August 2007
 - Using 81/100 key words in April 2008
 - MLU-M increased from 3.71 to 6.29
- **Student 3: U128 Sequenced in PF**
 - Using 42/100 key words in August 2007
 - Using 99/100 key words in April 2008
 - MLU-M increased from 3.82 to 7.25

Summary of the DTM

- **Teach** the lesson with the critical vocabulary
 - Identify referential vs. critical thinking questions that are already part of the lesson plan
 - Re-define referential, content words **DESCRIPTIVELY** with the available critical vocabulary
 - Use Visual Support Strategies (ALgS, Prompt, Respond) using a NALB
 - Modify current curriculum materials, as needed

Summary of the DTM

- **Talk about/Review** the information with the AAC student
 - Train assistants to model simultaneously
 - Immediate review using the student's AAC system
 - Create review materials using "symbolized" critical vocabulary
 - e.g., worksheets created with PASS or Writing with Symbols software

Summary of the DTM

- **Test** the lesson with the critical words
 - Shift from referential questions ("Where is the Iditarod held?") to descriptive questions ("Tell me something about the Iditarod.")
 - Determine evaluation protocols, based on the descriptive teaching and review provided to the student

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Visual Support Materials

- Start with a NALB for any student with a voice output device with a robust vocabulary (go to www.vantatenhove.com)
- Make additional visual support materials to supplement the NALB to use in specific educational lessons (Robin Hurd, 2007, AAC Institute Symposium)
 - Make materials on a daily basis that emphasizes critical words for specific lessons
 - Modify curriculum materials on specific topics