Achieve Perfect Harmony in AAC Intervention

Katherine M. Lamb Ph.D., CCC/SLP

Financial and non-financial disclosure statement

- Relevant Financial Relationship(s): I am a salaried employee of Valdosta State University; University System of Georgia.
- Relevant Nonfinancial Relationship(s): I have no relevant non-financial relationship(s) to disclose related to this presentation at GSHA.

Definition of Assessment

- "gathering and analyzing information so that people who communicate through AAC and those who assist them can make informed decisions about
- 1)the adequacy of current communication,
- 2)the individual's current and future communication needs,
- 3)the AAC techniques that appear to be most appropriate,
- 4)how to provide instruction regarding the use of these techniques, and
- 5)how to evaluate the outcomes"

Candidacy Model

(No Longer Used!) "the too something" model

- AAC was only for people with skills
- •AAC was not for people who might develop natural speech
- •AAC was not for people with developmental cognitive delays

  (Elliott, Racine, & Busse, 1995, p.1009

Experience needed!

- "inadequate capabilities",
- excluded from the experiences, instruction, and practice
- constantly working on "prerequisites" proved ineffective

2003 Committee for Persons with Severe Disabilities

- Communication needs and preferences
- Do not use
- Expressive/receptive gap or cognitive referencing
- Chronological age
- Absence of certain cognitive "prerequisites"
- Failure to benefit from previous communication services
- Restrictive interpretations of necessity
- Lack of trained personnel
- Lack of adequate funds/resources

Communication Needs Model

- *GOALS*:
- document communication needs
- determine needs are met through current techniques
- reduce the number of unmet communications needs through systematic intervention with *AAC*

- *Why might this be challenging?*

Communication Needs Model

- easily defined communication needs
- others, inadequate
- does not
  - accurately reflect individual complexities
  - consider planning for the future

Four areas in the Model

1. Existence of communication participation patterns
2. Barriers to participation in communication situations
3. Effectiveness of previous strategies to enhance participation
4. New potential strategies to enhance participation

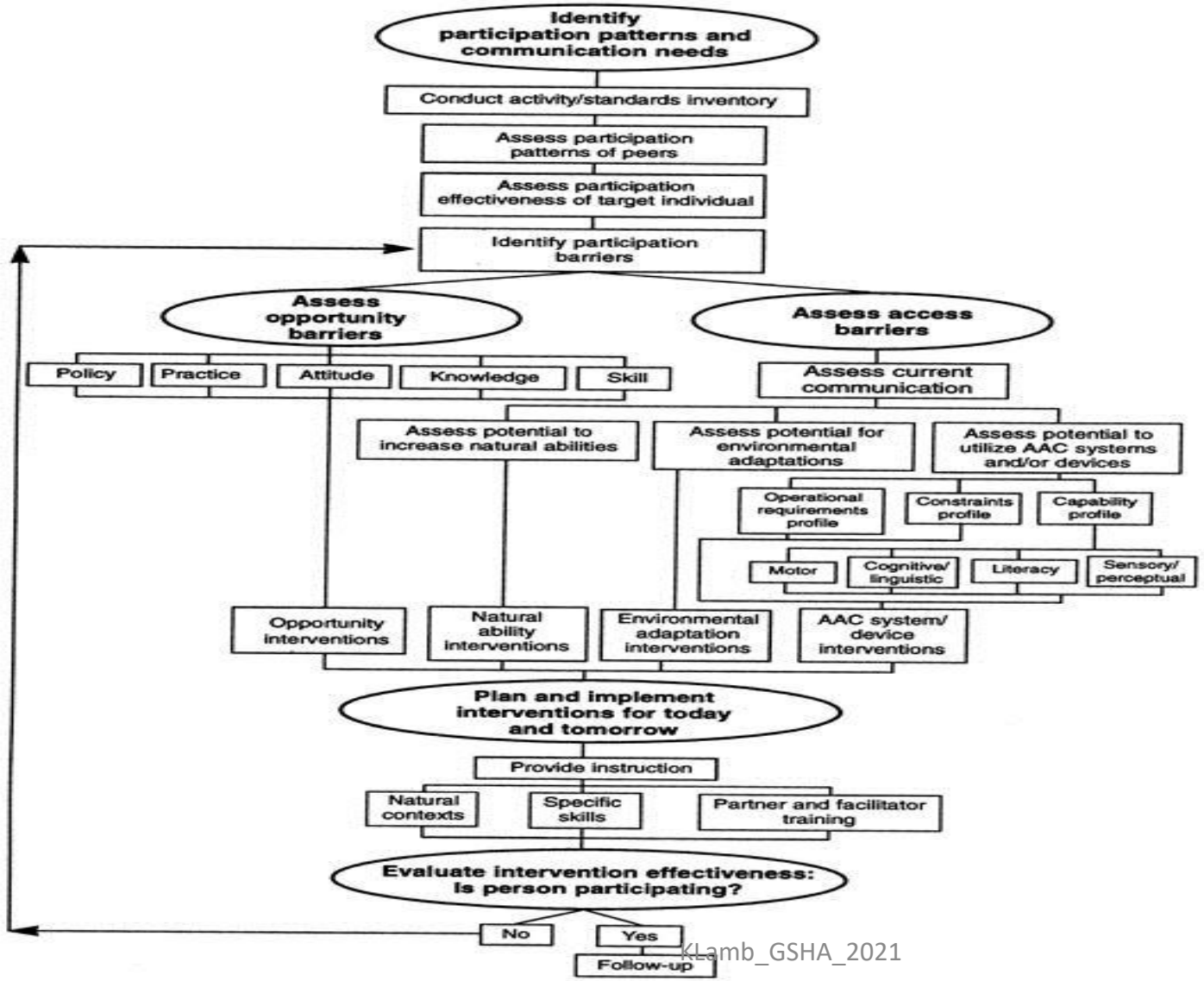
Users of AAC and the Model

- Extended intervention strategies
- Changing nature of communication needs and capabilities

Assessment phases

- Initial assessment for today
- Detailed assessment for tomorrow
- Follow up assessment

Participation Model



Participation Inventory

Directions:
1. List the *primary and secondary activities* in which peers without disabilities are expected to participate.
2. Select one or more peers without disabilities who are typical in terms of their ability to achieve the expected standards. After observing one of the peers in each activity listed, indicate the *level of peer participation* achieved by entering a *P* in the appropriate category for each activity.
3. After observing the target individual in each activity, indicate the *level of participation* achieved by entering a *T* in the appropriate category for each activity.
4. In the Discrepancy column, indicate *yes* if a participation gap exists for the target individual compared to peers and *no* if a participation gap does not exist.
5. Based on your observations and impressions, indicate if the barrier to participation appears to be related to *opportunity barriers, access barriers,* or *both.*

	Level of peer participation					Discrepancy		Type(s) of barrier(s)	
Activity	Independent	Independent with set-up	Verbal assistance	Physical assistance	Unable to participate	Yes	No	Opportunity	Access
1.									
2.									
3.									
4.									
5.									
6.									

Figure 6.2. Activity/standards inventory.

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Identify Barriers

ASSESSING PARTICIPATION IN STUDENTS WHO USE AAC

(Based on Blackstien-Adler, 2003)

Name: Date: Completed by:

Activity: Setting:

Target Student: Peer:

ACTIVITY STEPS	LEVEL OF INDEPENDENCE				Did Not Participate	Discrepancy?	BARRIERS
Essential steps in the activity	Indep.	Indep. w/ Set-up	Needs Verbal Assist	Needs Physical Assist			What Seemed to Cause the Discrepancy?
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	
	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Peer o Target	o Yes o No	

Generative Language Users

- Client will produce at least 10 3-word sentences using appropriate word order with 90% accuracy during a 15 minute story-reading activity.
- Focus on syntax and semantics
  - variety of semantic-syntactic categories
  - Use of various parts of speech
- Where can individual participate at a level similar to peers?
- Where is there a participation gap?

Emerging Generative Language User

- Client will spontaneously produce at least three 2-word messages using speech and/or his AAC device with 90% accuracy during three different classroom activities
- Goals and objectives = communication
- Not primarily using technology

Level 1-2 Communicator

- Level 1-2 Communicator
- Consistently
  - protest
  - request continuation (action)
- Actions:
  - tickled,
  - listening (more music)
  - vibrating toy
- Other motivating activities that can be repeated or resumed
- Goal:
  - Consistently request attention
  - motivated by attention (children)
  - Consistently request objects
  - Demonstrate 1 object before working on choices
  - Asking for objects that he likes

Participation Model

- identify participation patterns
- identify when communication interferes with participation
- utilize a team approach
- requiring an *AAC* is usually chronic,
  - needs and capabilities often change
- requires multiphase assessment

AAC Assessment for Participation

- PHASE I: Referral for AAC assessment
- □ AAC needs are recognized
- PHASE II: Initial assessment and intervention
- □ gather information
- PHASE III: Detailed assessment for tomorrow
- □ variety of specialized environments
- PHASE IV: Follow-up assessment
- □ meets the user's changing needs and capabilities

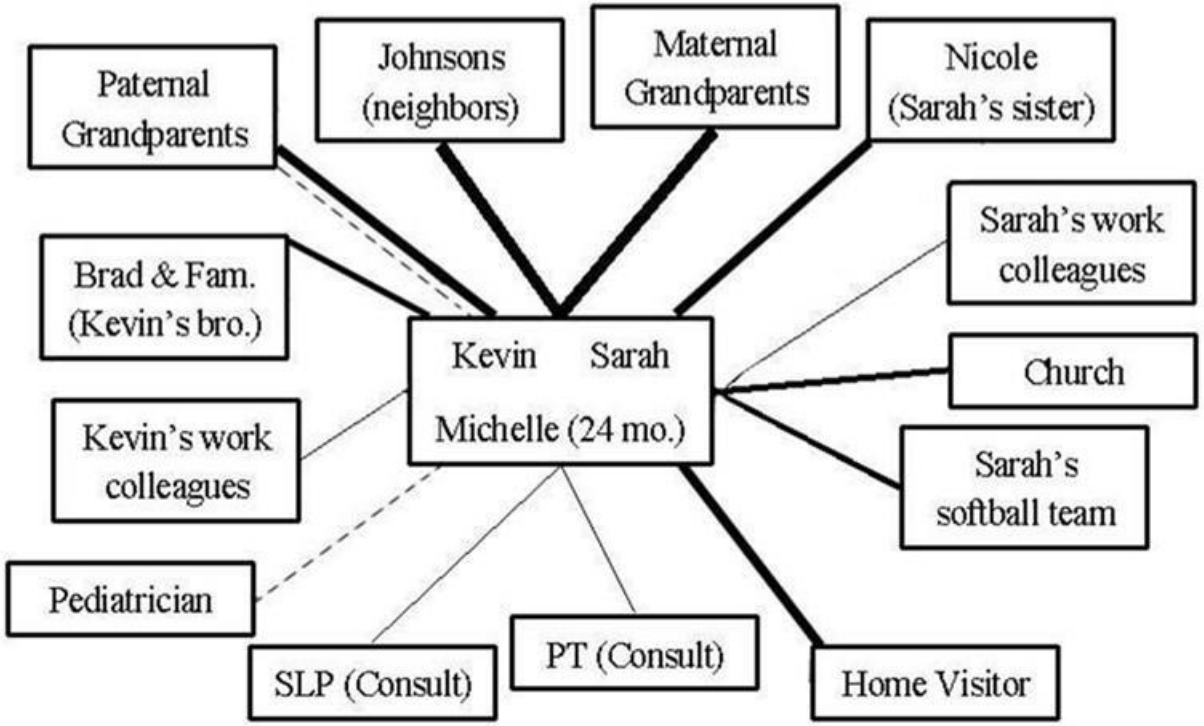
AAC Assessment

- Participation Patterns and Needs
- Opportunity Barriers
- Barriers to Access

Identify Participation Patterns and Communication Needs

- "natural environments" and the communication partners
- Identify social networks
- use ecomaps or social circles

Ecomap


Paternal Grandparents
Johnsons (neighbors)
Maternal Grandparents
Nicole (Sarah's sister)
Brad & Fam. (Kevin's bro.)
Sarah's work colleagues
Kevin Sarah
Michelle (24 mo.)
Church
Kevin's work colleagues
Sarah's softball team
Pediatrician
SLP (Consult)
PT (Consult)
Home Visitor

Participation Inventory

- Individual's natural environments
- Assess the participation patterns of peers
- Then, assess the participation patterns of individual
- Look at specific activities

Participation Performance Standards

- independent
- independent with set-up
- verbal assistance
- physical assistance
- Identify an activity and break it down into logical steps;
- Then, assess the individual's level at each step

Participation Barriers

- Once identified, determine the types of barriers
- opportunity barriers
- barriers imposed by other people
- can't be eliminated by providing an AAC system
- access barrier
- limited abilities in individual or in the current AAC system

Types of Opportunity Barriers

- 1. policy barriers: legislative or regulatory decisions
- segregation policies
- limited use policies
- 2. practice barriers – conventions that have become common
- across setting or with certain professionals

Types of Opportunity Barriers (cont.)

- 3. attitude barriers – belief held by an individual that hinders participation
- negative or restrictive attitude held by person in power
- subtle and may result from reduced expectations of an AAC user

Types of Opportunity Barriers (cont.)

- 4. knowledge barriers – lack of information
- issue is a lack of knowledge related to *AAC*
- exist at some point in almost every *AAC* situation
- 5. skill barriers – despite knowledge, some supporters may have difficulty with implementation
- may need to teach implementation in context

Access Barriers

- capabilities, attitudes, and resource limitations
- may be related to
  - mobility problems
  - difficulty manipulating objects
  - cognitive disorders
  - sensory-perceptual problems

Access Barriers

- assess current communication
- record the technique being used
- determine operational and social competence
- record the types of messages & effectiveness
- formalized observation instruments and checklists are available

Access Barriers (cont.)

- assess potential to use/increase natural speech
- use *Meaningful Use of Speech Scale* (Robbins & Osberger) to determine speech effectiveness – 10 levels
- intelligibility tests
- distinguish between intelligibility & comprehensibility
- Supplemented intelligibility

Access Barriers (cont.)

- assess potential for environmental adaptations
- altering:
- physical spaces
- locations
- structures

Access Barriers (cont.)

- assess potential to utilize AAC
- operational requirements profile
- you must be aware to use the system
- constraints profile
- facilitator skills profile
- capability profile

Access Barriers (cont.)

- constraints – practical issues
- user and family preferences
- practical use of the system portability
- preferences and attitudes
- abilities of others:
  - ability to understand the output
  - age and literacy skills of
- funding
- priorities – medical situation may be overwhelming

Funding Issues

- Differs:
- country to country
- age and disorder type
- •develop a funding profile
- □ survey funding resources
- □ identify potential funding sources
- □ prepare funding plan
- □ assign responsibility
- □ prepare documentation
- □ appeal
- □ proceed to hearing

Types of Barriers

Opportunity Barriers

- •Policy
- •Practice
- •Attitude
- •Knowledge
- •Skill

Access Barriers

- •Physical / motor
- •Cognitive
- •Expressive communication
- •Literacy
- •Visual / auditory
- Other:

Principles of Assessment

- 1. Assessment is not a one-time process.
- 2. The purpose is to facilitate meaningful communication and participation in daily life activities.
- 3. The mere provision of an AAC system is often not enough.
- 4. Everyone can & everyone does communicate.
- 5. Technology alone does not ensure competent communicator.

Assessing Specific Capabilities

- **Definition of "capability**
- Information about capabilities in multiple areas
- ·directly relate to AAC intervention
- ·profile of the individual's capabilities
  - matched to the operational requirements of particular AAC
  - identify strengths and skills vs. impairments
- assessment

Three Assessment Approaches

- Norm-referenced assessment
- Criteria-based assessment
- Predictive assessment/feature matching

Norm-Referenced Tests

- why these may **not** be appropriate
- pointing? object manipulation?
- verbal responses required?
- time limitations?
- modifications may be permissible
- sometimes standardized tests are required by agencies

  - When norm-referenced tests are administered with modifications, they can be useful for obtaining information related to the person's capabilities rather than obtaining scores that categorize people according to a developmental or mental age.

Criteria-Based Assessment

- expedite assessment
- series of branching decisions
- exclude some questions
- more critical issues/questions

Predictive Assessment

- assess capabilities
- predict how well 1 might utilize
- set up a "trial" for a designated period of time
- Feature matching
  - AAC team have knowledge about the options

Major Areas of Capability Assessment

- 1. Positioning and Seating
- 2. Motor Capabilities
- 3. Cognitive/Linguistic Capabilities
- 4. Symbol Assessment
- 5. Language Assessment
- 6. Literacy Skills
- 7. Sensory/Perceptual Skills

Assess Positioning and Seating

- Types of Neuromotor Impairments
- Principles and Techniques

Positioning & Seating

- Skeletal alignment
- Muscle tone
- Hypertonicity
- Hypotonicity
- Primitive reflexes
- Movement disorders

ATNR –impact on AAC use

6. Asymmetric tonic neck reflex

- When the baby is at rest and not crying he lies at inervals with his head on one side, the arm extended to the same side, and often with a flexion of the contralateral knee.

Assessment steps

1. Observe in seated position
2. Identify supports for proper position
3. Assess out of chair

- **Goal: optimize position so that an assessment can continue**

Seating Options

- Rifton toddler chair
- Corner floor chair
- Skillbuilders® Floor Sitter
- Wheelchair desk

Assess Motor Capabilities

- Identification
- Long-Term Motor Skills
- Capabilities for
- Direct Selection
- Manual Signing
- Switch Activation

Individual can use during the assessment

- Establish a yes/no
- Use of hands
- Use of eye gaze
- Provide alternatives

Determine long-term options

- Assess hand and arm control
- Head/orofacia lcontrol
- Foot/leg control
- Perform switch assessment for scanning:
  - Identify body site
  - Various scanning strategies and arrangements

Assess Cognitive/Linguistic Capabilities

- Cognitive/Communication Assessment
- Symbol Assessment
- Language Assessment

Cognitive/Communication Assessment

- Facilitate the process of matching user to an appropriate *AAC*
- Not to identify an individual's level of cognitive disability

Six Aspects of Cognitive / Communication Development

- Awareness
- Memory
- Communicative intent
- World knowledge
- Symbolic representation
- Metacognition

Process

- Conduct a functional assessment
- *Functional Assessment of Communication Skills for Adults*(ASHA FACS, 2004)
- Analyze the cognitive demands of AAC tasks
- Determine if the user can accomplish (Team)
- Intervention trials to understand the user's capabilities

Instruments

- •*Communication Matrix* by Rowland
- •*Communication and Symbolic Behavioral Scales* (CSBS) by Wetherby& Prizant
- Measure early cognitive skills related to communication
- *Sequenced Inventory of Communication Development, Revised* (SICD-R)by Hedrick, Prather, & Tobin
- *Adapted Sequenced Inventory of Communication Development* (A-SICD) for Adolescents and Adults with Severe Handicaps by McClennen

Modifications to Cognitive Tests

- •modifications to Piaget
- •altering and enlarging materials
- •multiple-choice format to questions
- •"orientation" questions
- •using a yes/no format when possible

Symbolic Representation

- **Goal** : select the types of symbols that will meet current and future needs
- not trying to identify perfect system
- several symbol types

Components of Symbol Assessment

- Functional Use
- Receptive Labeling and Yes/No
- Alternative Visual-Matching
- Question and Answer
- Requesting
- Advanced Symbol Use
- Symbol Categorization and Association

Process

- 10 functional, familiar items
- Find symbols of various types to represent items
- Think of a client
- How could you represent these items using various symbols?

Functional Use Format

- User understand the functional use of objects?
- Task = the client is given the opportunity to **demonstrate** use of actual objects

Receptive Labeling & Yes/No Format

- Understand that a symbol represents a referent?
- Task = present 2 or more symbols of a particular type and ask client to point to the symbol that you name
    - "receptive identification"
- or "Is this a _____?" to elicit yes/no responses

Alternative Visual-Matching Format

- object and two symbols
- ask to match the object to the correct symbol
- eye gaze, point, direct selection, scanning
- flexible

At This Point…

- person understand the functional use of familiar objects
- recognize verbal labels
- match symbols to referents
- No?
- **"beginning communicator"**
  - strategies to build communicative skills & teaching symbol-referent associations

Question & Answer Format

- 2 or more symbols of familiar objects
- Ask simple "knowledge-based" questions
- Knowledge-based questions should NOT be confused with receptive labeling questions

Requesting Format

- Use symbols to make spontaneous, unprompted requests?
- natural context
- ***Indirect***

At This Point

- Can communicate basic *functions* using symbols
- Can use symbols in a more advanced linguistic way?

More Advanced Symbol Use

- Use symbols other than nouns?
- Chain two symbols together?
- Ideas:
  - "Go Fish" with dual displays
  - Model 2 symbol messages with own display
  - Can do the same
  - later or different context

Symbol Categorization and Association

- categorization skills or iconic encoding
- Task = Provide symbols of various items from two or more semantic categories or from activity categories
  - sort the symbols into given categories by hand or eye gaze

Symbol Association/Semantic Compaction Assessment

- Various aspects of a symbol
- Set of symbols and ask to answer association questions
- "What goes with rain?"
- "What makes you think of food?"
- Successful?
  - construct simple phrases
  - can recall after time

Language Assessment

- Single-Word Vocabulary
- Language Abilities

Single-Word Vocabulary

- Measure receptive vocabulary
- *The Peabody Picture Vocabulary Test-4* (PPVT-4) may be modified for motor impairments without losing validity
- Do not report the PPVT-4 as a global language test!
- Also measure comprehension of relational terms

Language Abilities

- Observations
- Informants and communication diaries
- TACL-4 measures vocabulary, morphology, grammar, and syntax, but does not require an oral response

At This Point

- The purpose is to gather information for intervention planning!
- Develop a communication profile
  - Communicative modes
  - Communicative functions
  - Communicative rate (frequency of communication attempts)
  - Language comprehension
  - Vocabulary (receptive & expressive)
  - Syntactic knowledge and use
  - Pragmatics

Literacy Assessment

- Print and Phoneme Recognition
- Word Recognition
- Reading Comprehension
- Spelling Assessment

Print and Phoneme Recognition

- Screen for recognition of letter names and sounds
- May be poor even for users of AAC who are literate

Word Recognition & Reading Comprehension

- *Reading Comprehension Battery for Aphasia* (RCBA)
- nonstandardized word recognition and comprehension test
- multiple choice contextual testing

Spelling Assessment

- Spontaneous spelling
  - Spell letter by letter
- ·First letter-of-word spelling
  - "what's the first letter of this word?"
    "what's the first letter in ___?"
  - important for using **word prediction** techniques
- Recognition spelling
  - sight-word vocabulary
  - ask to identify whether words are spelled correctly

Sensory/Perceptual Assessment

- Vision Assessment
- Hearing Assessment

Vision

- OT
- type, size, placement, spacing, colors
- visual acuity
- visual field
- oculomotor function
- light sensitivity
- color perception
- visual stability
- visual competency

Vision

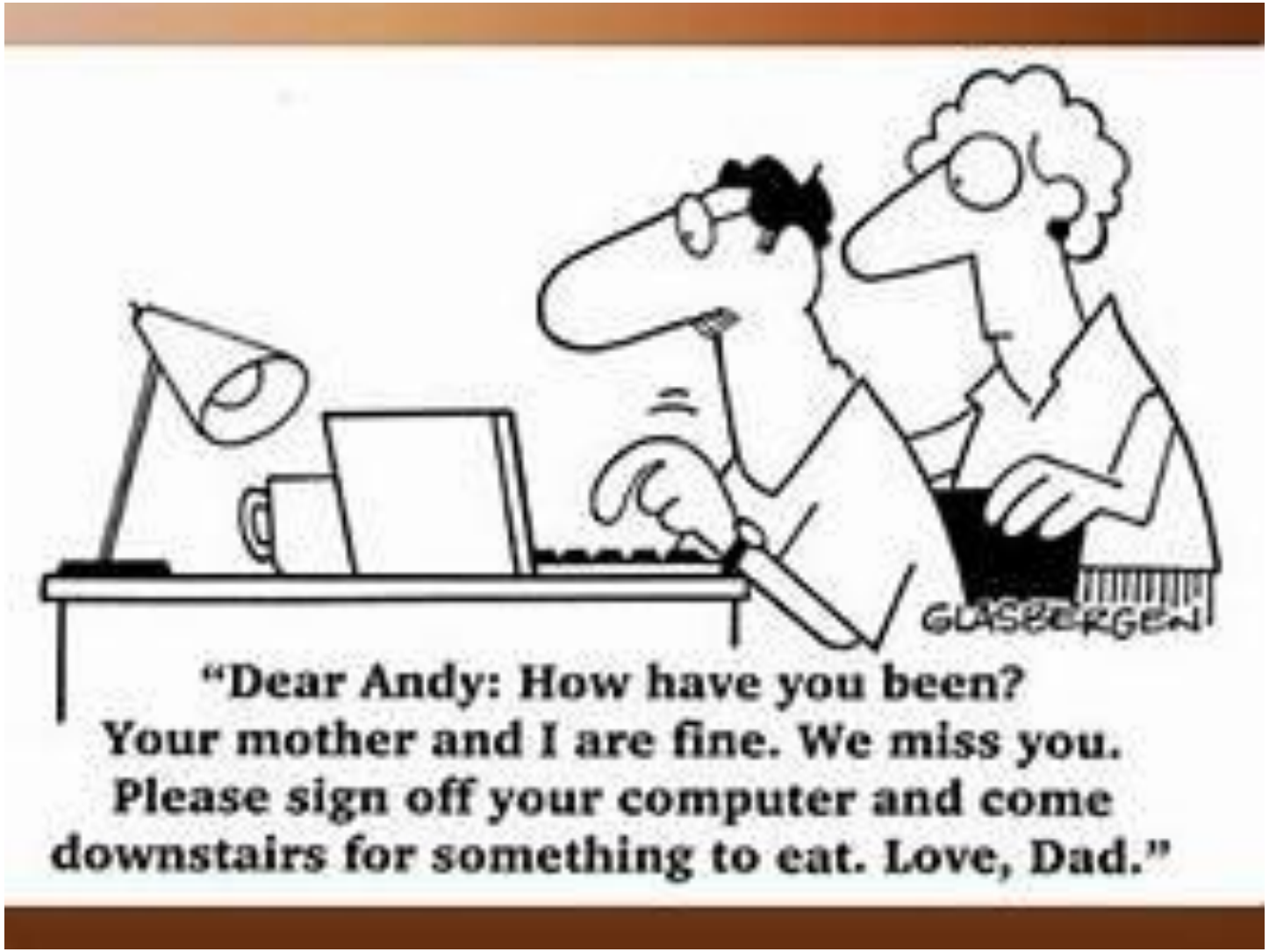
- see and how they can see it
- help you design an AAC system
- may change over time

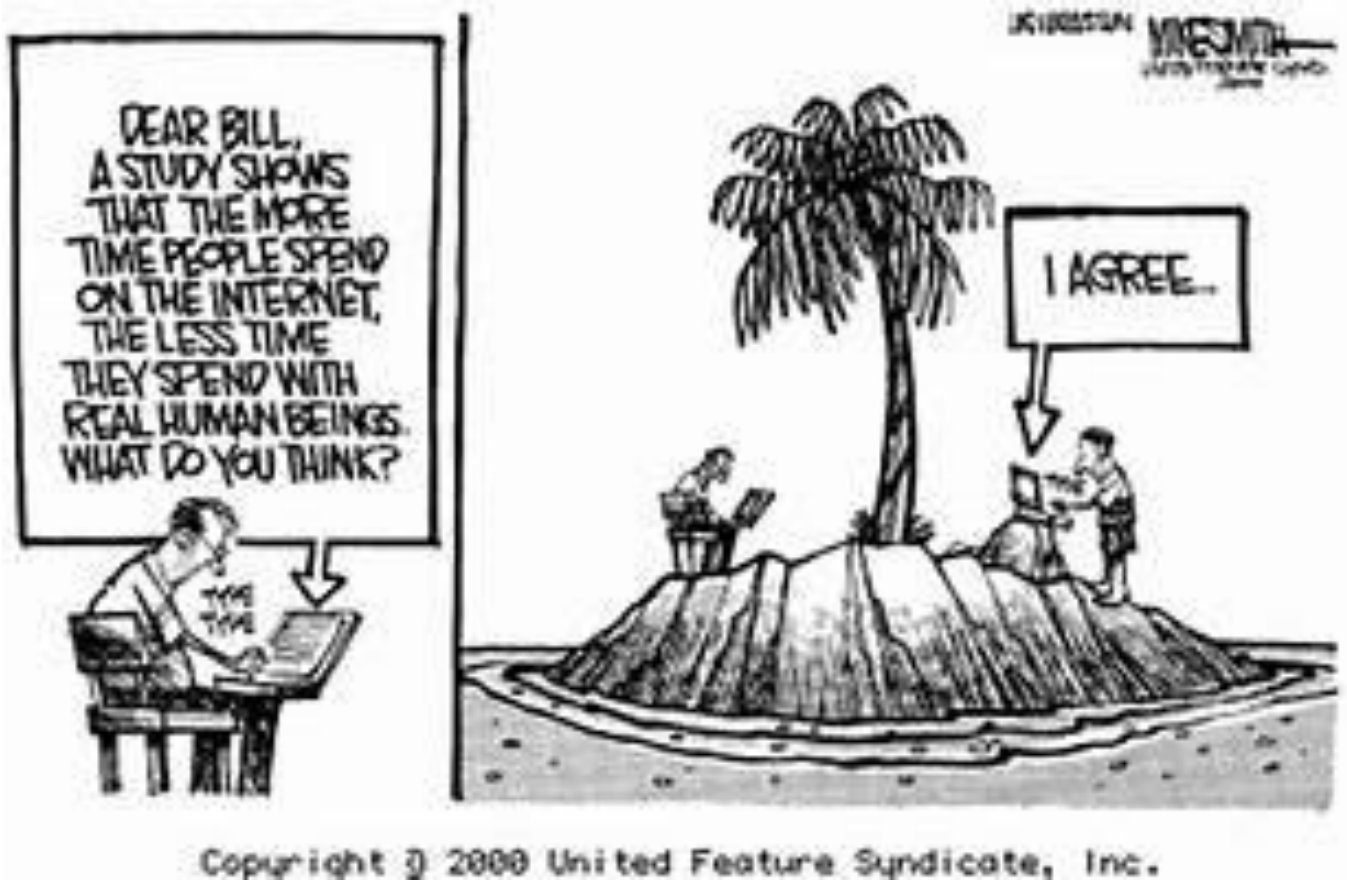
Hearing

- planning auditory scanning
- visual impairments often benefit
- synthesized and digitized speech?
- others?

Computer-based tools

- Seating & positioning webcast:
- http://aac-rerc.psu.edu/index-46797.php.html
- •Online database of AAC products:
- http://assistivetech.net
- •Assessment reporting tool:
- http://www.dougdodgen.com/index.html
- •Feature matching software:
- http://www.dougdodgen.com/index.html


GLASBERGEN
"Dear Andy: How have you been?
Your mother and I are fine. We miss you.
Please sign off your computer and come
downstairs for something to eat. Love, Dad."


DEAR BILL,
A STUDY SHOWS THAT THE MORE TIME PEOPLE SPEND ON THE INTERNET, THE LESS TIME THEY SPEND WITH REAL HUMAN BEINGS. WHAT DO YOU THINK?
I AGREE...
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