Assistive Technology Assessment

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Learning Outcomes

- Identify the steps in an AT assessment
- Identify appropriate goals and outcome
  measures for an intervention

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Why is an Assessment Important?

- Want to "get it right"
- Limited time and resources to work with an individual
- Wrong solutions lead to poor outcomes, frustration, and even reduced function, efficiency or medical status

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Common Reasons for Equipment Abandonment?

- Does not meet the goals of the consumer or consumer's family/care-givers
- Consumer does not have the required skills
- Consumer or AT team had unrealistic expectations
- Consumer's lack of motivation
- Consumer is intimidated by the technology

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Common Reasons for Equipment Abandonment?

- Needs or function of the consumer have changed
- Inadequate training on the device
- Consumer is embarrassed to use it
- Consumer has low self esteem

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AT Service Models

- Human, Activity, Assistive Technology (HAAT)
- Student, Environment, Task and Tools (SETT)
- Matching Person and Technology
- Education Tech Points

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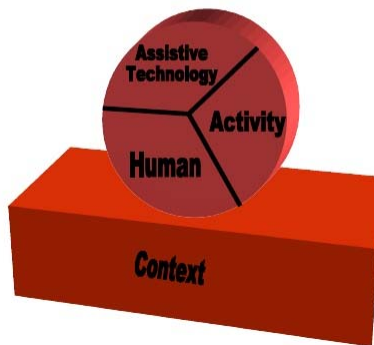
The HAAT Model

- The **Human Activity Assistive Technology Model** proposes a framework for understanding the place of assistive technologies in the place of the lives of those with disabilities.
- The model has four components – the human, the activity, the assistive technology, and the context in which all three of these exist.
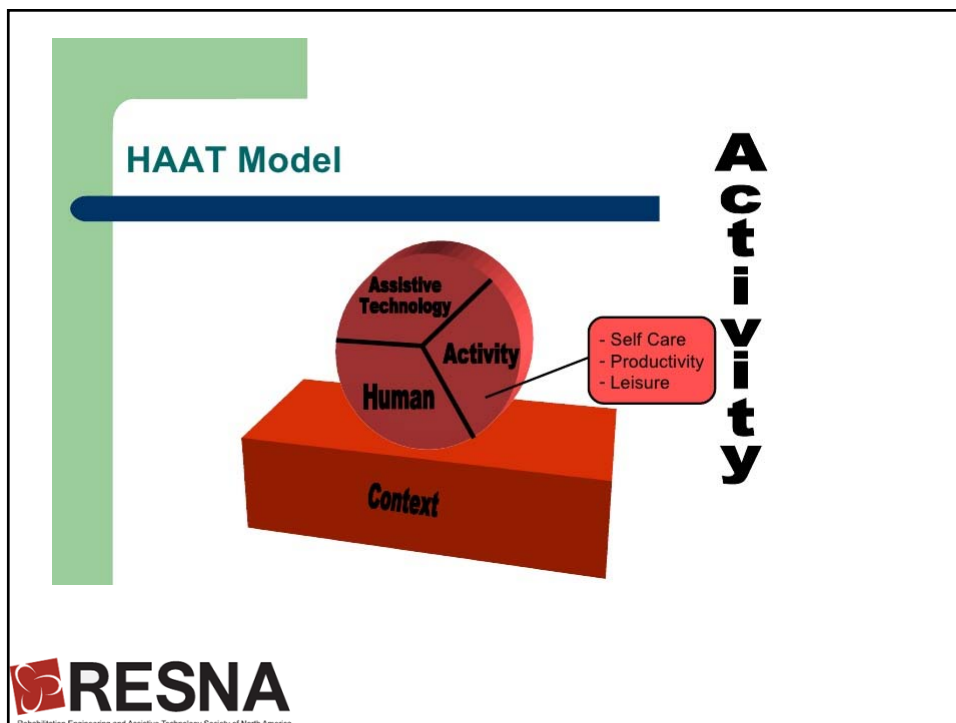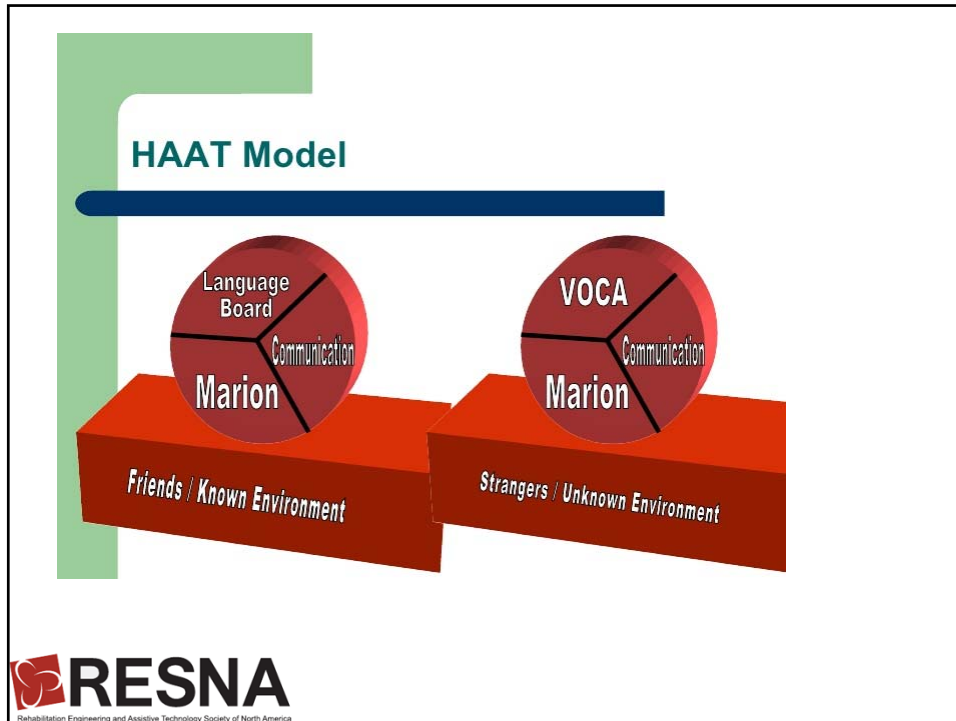
Damian Gordon
http://www.slideshare.net/DamianGordon1/at-frameworks-the-haat-model

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HAAT Model

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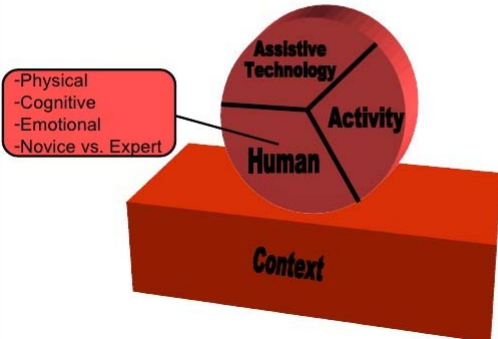
The HAAT Model

- **The Activity**
  - When an individual lacks the capacity to complete a task, the manner in which that task is completed including the use of AT, must be changed.

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HAAT Model

-Physical
-Cognitive
-Emotional
-Novice vs. Expert

Assistive Technology

Activity

Human

Context

Human

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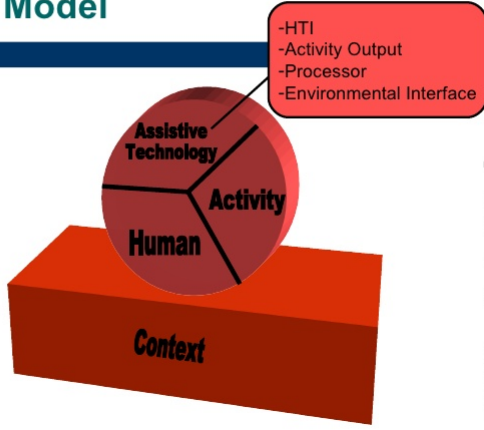
The HAAT Model

- **The Context**
  - The four major considerations in context are;
    - Physical context
    - Social context
    - Cultural context
    - Institutional context

HAAT Model

-HTI
-Activity Output
-Processor
-Environmental Interface

Assistive Technology

Assistive Technology

Activity

Human

Context

The Provision Process

A. Referral
B. Assessment
C. Implementation
D. Follow-up

Follow-Up → Referral / Recognition of Need → Assessment → Implementation and Training → (cycle)

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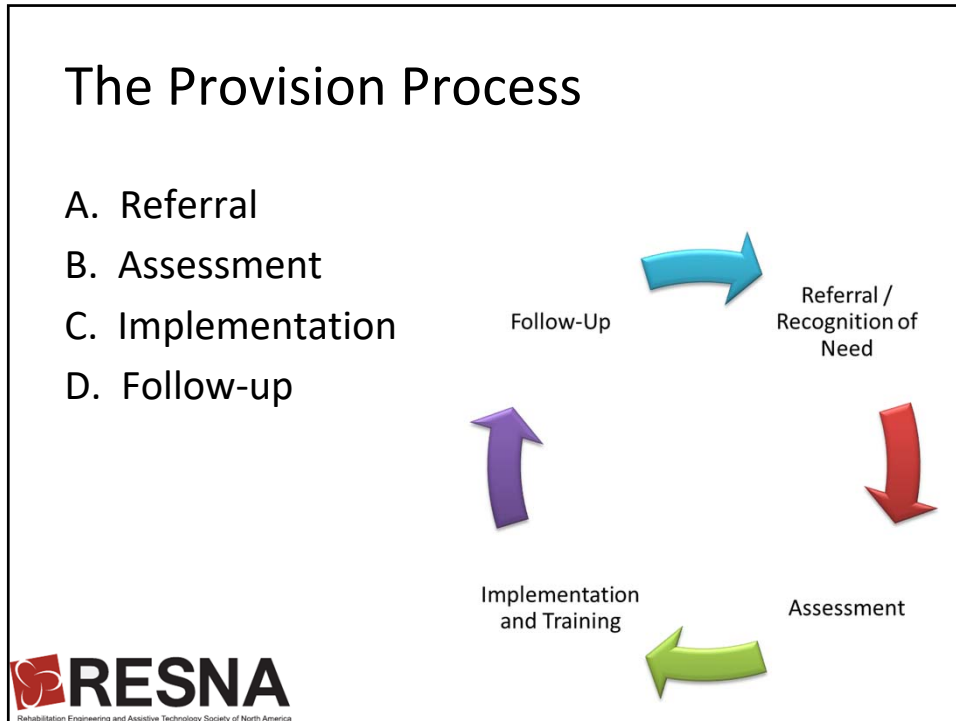
The Provision Process

A. Referral
- Ensure referral is appropriate
  - If not, refer elsewhere
- Plan the assessment
  - Team members
  - Evaluations needed

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The Provision Process

A. Referral

B. Assessment

   1. Gather information

   2. Analyze information

   3. List goals and desired outcomes

   4. Define desired features

   5. Consider available interventions

   6. Select intervention

   7. Make recommendations

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The Provision Process

A. Referral

B. Assessment

   1. Gather information

     a. How:

- Interview
- Review of records, questionnaires
- Observation
- Evaluations
- Equipment trials

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The Provision Process

A. Referral

B. Assessment

   1. Gather information:
   What:

- Quantitative and qualitative
- Objective and subjective

Quantitative Data

are made with instruments such as rulers, balances, graduated cylinders, beakers, and thermometers.
These results are measurable.
(numbers)
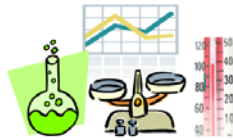
Qualitative Data

use your senses to observe the results.

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The Provision Process

A. Referral

B. Assessment

   1. Gather information

      b. medical and personal information

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The Provision Process

A. Referral

B. Assessment

   1. Gather information

      c. Needs assessment and task analysis

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The Provision Process

A. Referral

B. Assessment

   1. Gather information

      d. Sensory abilities

- Vision
  - Acuity
  - Tracking and scanning
  - Visual fields
  - Visual perceptual function
- Hearing
- Tactile/somatosensory
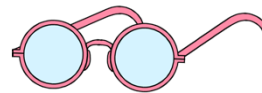
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The Provision Process

A. Referral

B. Assessment

   1. Gather information

      e. Physical abilities

- Orthopedic issues
- Muscle tone
- Muscle strength
- Endurance
- Coordination
- Range of motion

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The Provision Process

A. Referral

B. Assessment

   1. Gather information

      f. Cognitive abilities

- Attention
- Problem solving
- Memory (short and long term)
- Sequencing
- Judgment

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The Provision Process

A. Referral

B. Assessment

    1. Gather information

        g. Language abilities

- Receptive
- Expressive
- Sequencing
- Coding
- Categorizing

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The Provision Process

A. Referral

B. Assessment

    1. Gather information

        h. Positions where equipment will be used
          e.g. sitting in wheelchair, lying in bed

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The Provision Process

A. Referral

B. Assessment

    1. Gather information

        i. Environments of use e.g. school, home, work, community

        j. Social and cultural issues

        k. Family issues

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The Provision Process

A. **Referral**

B. Assessment

    1. Gather information

        l. Equipment use in …

- Past
- Present
- Foreseeable future
  - What worked?
  - What didn't?

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The Provision Process

A. Referral

B. Assessment

    2. Analyze information and clarify needs
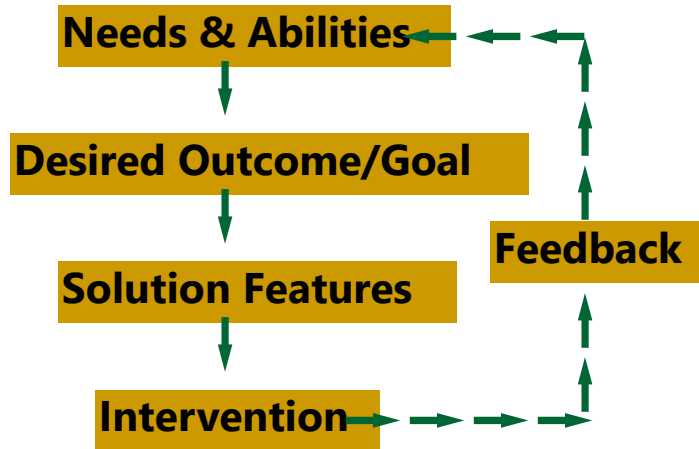
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Needs & Abilities

Desired Outcome/Goal

Solution Features

Feedback

Intervention

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The Provision Process

A. Referral

B. Assessment

   3. Goals and desired outcomes

- Based on needs assessment
- Short and long term goals
- Attain team consensus
  - including end user!

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Categories of goals

- Improved function
- Improved health, reduced risk of pathology
- Improved safety
- Improved comfort
- Device mastery and appropriate use

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The Provision Process

A. Referral

B. Assessment

    4. Define desirable technology features - before selecting the specific equipment

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The Provision Process

A. Referral

B. Assessment

    5. Consider available interventions

- List all possible solutions
- No tech, low tech, and high tech
- Prioritize pros and cons of each option
- Evaluate each solution's ability to match the identified parameters

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The Provision Process

A. Referral

B. Assessment

   6. Select the intervention of choice

- Include equipment, training, support
- Consumer makes the final decision
- Ensure that everyone understands and agrees with the plan (consensus)
- Consider funding options

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The Provision Process

A. Referral

B. Assessment

   7. Make recommendations

- Assessment report
- Equipment prescription, letter of medical necessity
- Other documents as needed
- Delineation of roles for implementation
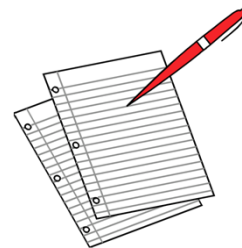
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The Provision Process

A. Referral

B. Assessment

C. Implementation
   1. Ordering
   2. Setup, delivery, and fitting
   3. Training and support

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The Provision Process

A. Referral

B. Assessment

C. Implementation

D. Follow-up
   1. Status of performance, verify outcomes
   2. Identify changes needed
   3. Update goals
   4. Update training and support strategies

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Why Outcome Measures?

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Consumer asks: *"Has this solution worked for others with needs and abilities like I have?"*

ATP asks: *"Will this intervention accomplish identified goals?"*

AT Supplier asks: *"Will this product's features meet the consumer's needs?"*

Payer asks: *"How can I direct my dollars to be most effective?"*

By objectively measuring the outcome of each intervention, we can answer these questions with greater confidence.

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Outcome measures evaluate
the end result against a predetermined set of
standards over a specified time.

- Establish objective measures for each goal

- Measure before and after the intervention

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Writing an Outcome Measure

- Clearly state the goal
- Attach an outcome measure to it
  - Be specific
  - Include:
    1. Desired end result (action, task)
    2. Qualifiers (specific time, accuracy)
    3. Acceptance level (standard, passing grade)

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Outcome Measures Tips

- Avoid opinions and vague statements
- Use objective measures when possible
- Use quantifiable measures
- Measure before and after intervention

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Tools for Outcome Measurements

- Usage measures (how long, how far)
- Quantitative
- Qualitative
- Effectiveness
- Efficiency
- Satisfaction

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Tools for Outcome Measurements

- Skill development time
- Norm referenced measures
- Criterion referenced measures
- Universally accepted scales and measures
- Clinical guidelines

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Let's write an Outcome Measure!

Ideas:

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Review Questions (feel free to discuss with your neighbors)

1. If a client referral is inappropriate, what is the next best step?
   a. See the client anyway and do the best you can
   b. Tell the client you are unable to meet their needs
   c. Refer the client to an appropriate provider
   d. Just ignore the referral

2. An outcome measure:
   a. Is a provider's opinion or prediction of the anticipated outcome
   b. Evaluates the end result against a predetermined set of standards over a period of time
   c. Measures function before intervention
   d. Measures function after intervention

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Review Questions (Here are the answers. How did you do?)

1. If a client referral is inappropriate, what is the next best step?
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2. An outcome measure:
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Questions?

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