

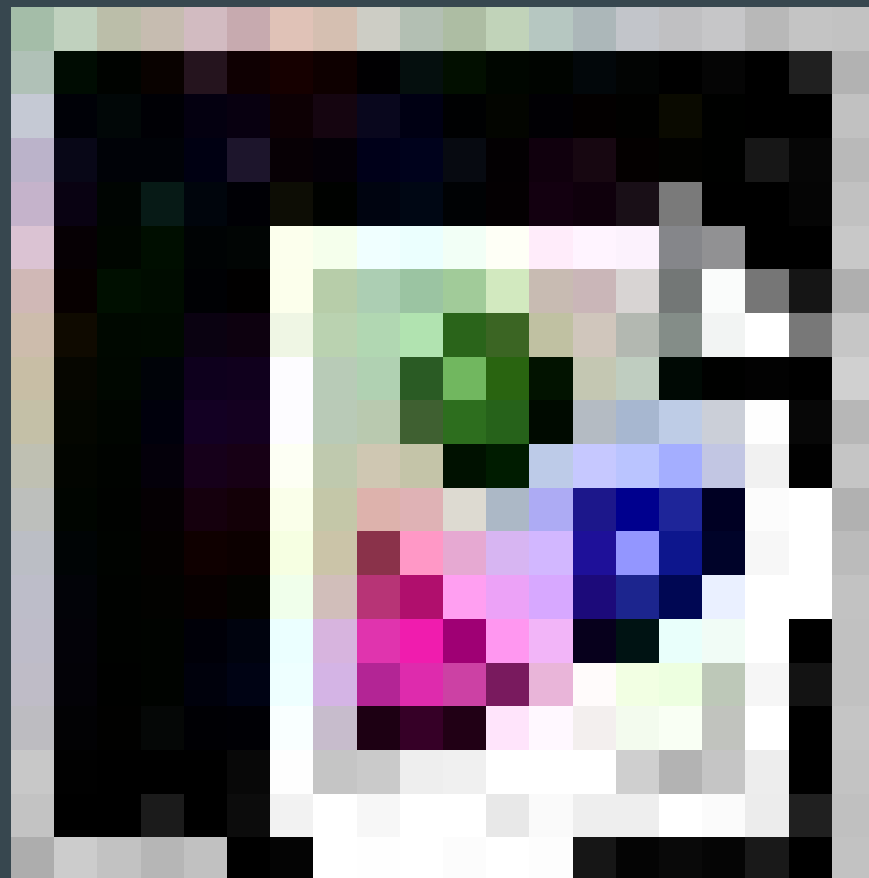
# Picture Exchange Communication System

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# What is PECS?

- Developed in 1985 in the U.S.
- Picture-based alternative augmentative communication (AAC) intervention for individuals with ASD & related developmental disabilities
- First used--Delaware Autism Program
- Focuses on the initiation aspect of communication
- Success reported with all ages and communication difficulties
- May also develop speech
- Teaching protocol based off B.F. Skinner's book "Verbal Behavior"



I want



big wheel



golf



trampoline



bubble blower



sand and water table



sidewalk chalk

sad



something  
hurts



something's  
changed



don't want to



tired



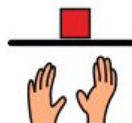
mad



Something's wrong



want something



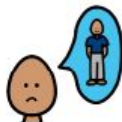
I don't understand



not on this board



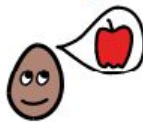
miss someone



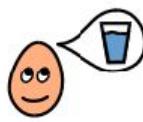
too noisy



hungry



thirsty



I don't know



# Theoretical Basis

- B.F. Skinner (Behaviorist Theory)
- “Verbal Behavior”
  - “Behavior reinforced through the mediation of other persons” (Skinner, 1957)
  - Linguistic Theory= biological, cognitive and environmental
  - Mand, Tact and Intraverbal
- Protocol combines theory and practices of behavioral and developmental perspectives
- Relies on ABA
  - Prompting
  - Reinforcement
  - Error correction strategies

# Population

- PECS is most effective with preschool (3-5 years) and elementary (6-11 years) aged children across a variety of settings--home, school, community, etc.
- The system is specifically designed for children diagnosed with Autism Spectrum Disorders (ASD) & other related developmental disorders
- While most research has been conducted on younger children, there is some evidence to support its effectiveness with middle school aged children

# Why Should PECS be Utilized?

- Low vocabulary
  - Children with ASD probably don't have a wide variety of words in their vocabulary that is appropriate for their age
- Communication impairment: core feature
- Pragmatic deficits
  - Limited use of eye contact, vocalization, gestures
  - Utilize other means to communicate with others
- Early intervention is crucial
  - These children do not develop verbal and nonverbal communication & expressing wants and needs can be challenging causing frustration leading to behavioral issues



# Why Should PECS be Utilized?

- Decrease behavioral issues
- Increase use of appropriate communication
- Implemented anywhere communication is needed/desired
  - Home, school, community setting, etc.
- Increase in communication and speech within a short period of time
  - 6-14 months
- Sometimes speech can be developed

# Effectiveness

PECS assists a child in developing expressive language by using generalization, reinforcement, and delay from the trainer

# Characteristics Impacting Effectiveness of PECS

- Important to determine which characteristics will allow children to benefit from PECS
  - Joint attention
  - Object exploration
  - Imitation
- Identify effective components of PECS

# PECS Longitudinal Study

- Longitudinal study- 1994 (Bondy and Frost)
  - 66 children with ASD of 5 years and younger
  - Over half used expressive speech without pictures to communicate within a year

# PECS Study

- Group and 10 single-subject studies
  - Measure effectiveness of PECS
  - Both groups demonstrated increase in communication
  - 3 of 10 single-subject were evaluated for maintenance and generalization
    - All 3 maintained mastery level of communication exchanges in phase II of PECS

# Comparing PECS to VOCA

- PECS vs. Voice Output Communication Aid (Lancioni)
  - Compared request among children with developmental disabilities
  - 170 of the 173 children improved the ability to make requests

# Mother-Implemented Study

- Mothers trained to teach their child how to utilize PECS
- All 3 children successfully acquired picture exchange that were generalized to other communication partners
- Maintained for at least 1 month
- No vocalization improvements

# Speech Outcomes

- Developers do not claim that PECS improves speech, but it is a *possible* outcome
- Study measuring spontaneous speech and nonimitative spoken act and words
  - 5 single-subject study with 12 children
  - 1 of the 5 had a 1-year follow up
  - Maintained increased speech that was developed during use of PECS



# Implementation of PECS

- Desired number of reinforcers are identified & picture/symbol cards are created
- Training Environment
- Teachers/Adults
- Communication Pictures/Symbols & Book
- Monitoring Individual Student Progress

# Phases of PECS

1. Teaching the Physically Assisted Exchange
2. Expanding Spontaneity
3. Simultaneous Discrimination of Pictures
4. Building Sentence Structure
5. Responding to What Do You Want?
6. Commenting

# Teaching the Physically Assisted Exchange

- Goal: learner will look at, reach for, pick up, & hand the picture/symbol to communication partner
- Helper & communication partner are required--prevents learner from becoming dependent on any one person
- NO VERBAL PROMPTS!
- The helper fully assists (hand-over-hand) the physical exchanges (i.e. pick up, reach, hand)
- Physical assistance is faded by moving to gestural cues before fading out physical prompts completely
- Immediate access to the requested item & reinforcement is provided with each successful exchange

# Expanding Spontaneity

- Goal: learner's spontaneity & generalization of the picture exchange will increase as distance between the learner and the communication book and/or communication partner increases
- Helper & communication partner are required
- NO VERBAL PROMPTS!
- The learner moves around to gain attention of communication partner
- Physical prompts & subtle visual cues are faded
- Reinforcers are increased & varied to strengthen communicative competence
- 20-30 opportunities per day provided in different places, with different people, and across distances

# Simultaneous Discrimination of Pictures

- Goal: learner will select the picture associated with object desired from a display of picture/symbols, approach the communication partner, & give the communication partner the picture to obtain the desired item
- NO VERBAL PROMPTS!
- Placement of pictures should vary in communication book
- The helper & communication partner should avoid saying “no” when the child makes a mistake--respond by giving the child what was requested even if you know it is not the desired item
- Ample exchange opportunities per day

# Building Sentence Structure

- Goal: learner will place the “I want” symbol next to desired item in communication book to request item
- Physical prompts initially used & quickly faded
- NO VERBAL PROMPTS!
- Once the sentence strip is introduced, it is used for all requests
- When reading the sentence strip, provide opportunities for verbal requesting by pausing
- Pictures of items are placed in the book on the sentence strip
- Communication book should be kept in a designated place that is accessible to the learner in all environments

# Responding to What Do You Want?

- Goal: learner will successfully answer the question, “What do you want?” and spontaneously request a variety of items
- One of the easiest steps of PECS!
- Spontaneous requesting should be alternated with responding to the verbal request “What do you want?”
- As the learner demonstrates the ability to complete the sentence strip & the exchange, the communication partner increases the time interval, encouraging the learner to complete the exchange prior to the point prompt
- Numerous opportunities provided each day to learner to request during functional, meaningful activities in different places, with different people, and across distances

# Commenting

- Goal: learner will successfully label & name items desired
- Teaching responses to a question begins with familiar items
  - Items you are asking the learner to label should not be used as reinforcers for a correct response-- may confuse learner as to what he/she is learning to do
- Response to questions are practiced during tx sessions & then generalized to other environments
- Materials that are interesting to the learner should be used when teaching to comment
  - e.g. using lift-the-flap books, hanging objects from ceiling, etc.



# VIDEO:

<https://www.youtube.com/watch?v=m1Ycvqhb-z8>

# Benefits of PECS

- Increases social communication skills (Yoder, P. & Lieberman, R. (2010))
- Decreases problem behaviors
- Does not hinder speech development (Bondy, A. & Frost, L. 2001; Bondy, A., & Frost, L. (1994))
- Facilitates acquisition of speech (Bondy, A. & Frost, L. 2001; Bondy, A., & Frost, L. (1994))
- Program can be easily understood by others
- Can be used with a large age range (Conklin, C. & Mayer, G.R. (2010))
  - Many populations can benefit from PECS
- Client directed; encourages client initiation instead of being prompted

# Cons of PECS

- Requires training for teachers or parents 299.00 (Parents)- 399.00 (SLPs)
- Implementation (requires consistency)
- Misinterpretation of picture cards
- In order to use the PECS program, cards must be available and carried with you at all times
- Not ALL children are guaranteed to benefit from the use of PECS\*

Flow Chart:

<http://www.pecsusa.com/Brochures/FlowChart-IsthispersonacandidateforPECS-Letter.pdf>

# Frequently Asked Questions

- Why can't I ask, "What do you want?" when teaching a child to use PECS?
- What is the difference between pictures and symbols?
  - Can you use both?
- What size pictures or symbols should be used?
- What do I do if the child does not want to use PECS?
- Will the child become dependent on using symbols?
  - Will they ever learn to talk?

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