PECS: Facts and Fiction

Catherine Horton
Jo-Anne Matteo
Jill Waegenaere
Lori Frost

www.pecs.com

PECS

- Development began in 1985 by Lori Frost, MS/CCC-SLP and Andy Bondy, PhD
- Based on principles of Applied Behavior Analysis and on B. F. Skinner’s 1957 *Verbal Behavior*
- Protocol was developed as a result of creative problem solving with one learner

Bob’s story

Bob’s background information:
- Attended Delaware Autism Program
- No functional communication skills, as he was unsuccessful with speech, sign and picture point systems
- Contextually Inappropriate Behaviors resulted from inability to communicate

First PECS Implementation:
- Matchbox cars were identified as a reinforcer
- Bob was successful in exchanging a picture to receive the reinforcer
- Progress with additional skills lead to the creation of PECS protocol

Bob’s story (cont’d)

PECS has become very popular:

*“The most widely used intervention was PECS, with almost all of the participants mentioning it, even those who did not use any other intervention in their program.”*


Popularity also brings controversy!
Common misconceptions about PECS

1. If you use pictures, you’re using PECS
2. If you implement PECS, the learner will never develop speech
3. If the learner begins speaking, stop using PECS immediately
4. PECS can only be used with children with autism
5. PECS only teaches learners to make single picture requests

6. You can’t do PECS with other programs (i.e. TEACCH, ABA, etc.)
7. Sign language is better
8. Receptive always precedes expressive in language development
9. There is no research to support PECS
10. PECS doesn’t work

MYTH: If you use pictures, you’re using PECS

FACT:
• Many people use pictures to target receptive communication skills (i.e. visual schedules)
• PECS = Picture Exchange Communication System
• Pictures ≠ PECS!
• Pec ≠ picture!

MYTH: If you implement PECS, the learner will never develop speech

FACT:
• Speech development takes time!
• Typical speech acquisition could take over 1 year for children who start using PECS prior to age 6
• The biggest change occurs when sentence structure is introduced (Phase IV)

NUMBERS OF PICTURES AND Spoken Words Acquired After PECS Training

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When is speech bolstered?

**MYTH:** If the learner begins speaking, stop using PECS immediately

**FACT:**
- There is no evidence to support that taking away pictures will promote more speech
  - Anecdotal information shows the opposite effect
- If you take away skills (by taking away pictures) that is unethical

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**Issues Related to Modality Transitioning**

- Transition from PECS to speech or PECS to voice output device
- Criteria for successful transition
  - Speech vocabulary = PECS vocabulary
  - Rate of initiation is equal
  - Length of utterance is equal
  - Speech is at least 85% intelligible to untrained listener

**MYTH:** PECS can only be used with children with autism

**FACT:**
- PECS was originally developed for young children with autism
- Since development in 1985, research indicates that PECS is a successful communication tool for learners of various ages and diagnoses

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**Learners with the following diagnoses have demonstrated success with PECS!**

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agenesis of the Corpus Colosum</td>
<td>Cerebral Palsy</td>
</tr>
<tr>
<td>Angelman Syndrome</td>
<td>CHARGE Syndrome</td>
</tr>
<tr>
<td>Apraxia</td>
<td>Cleft Lip and/or Palate</td>
</tr>
<tr>
<td>Alzheimer Disease</td>
<td>CMV (Cytomegalovirus)</td>
</tr>
<tr>
<td>Asperger Syndrome</td>
<td>Cognitively Impaired</td>
</tr>
<tr>
<td>Autism</td>
<td>Cornelia de Lange Syndrome</td>
</tr>
<tr>
<td>Brain Anomaly</td>
<td>Cri du Chat Syndrome</td>
</tr>
<tr>
<td>Brain Tumor</td>
<td>Deaf/Hard of Hearing</td>
</tr>
</tbody>
</table>

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**Learners with the following diagnoses have demonstrated success with PECS!**

<table>
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<th>Diagnosis</th>
<th>Example</th>
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</thead>
<tbody>
<tr>
<td>Developmentally Delayed</td>
<td>Partial Trisomy of 4P</td>
</tr>
<tr>
<td>Down Syndrome</td>
<td>Septo Optic Dysplasia</td>
</tr>
<tr>
<td>ESL (English as a Second Language)</td>
<td>Speech/Language Delay</td>
</tr>
<tr>
<td>Fetal Alcohol Syndrome</td>
<td>Rett Syndrome</td>
</tr>
<tr>
<td>Fragile X Syndrome</td>
<td>Traumatic/Acquired Brain Injury</td>
</tr>
<tr>
<td>Isodicentric 15 Syndrome</td>
<td>Turner Syndrome</td>
</tr>
<tr>
<td>Microcephaly</td>
<td>William Syndrome</td>
</tr>
</tbody>
</table>
Age Ranges

- Youngest learners with developmental disabilities: 16 months old
- Oldest learners: 80+ years old

**MYTH:** PECS only teaches learners to make single picture requests

**FACT:**
- PECS starts with single picture exchanges to request
- PECS expands to multi picture requesting
- PECS expands to commenting, both responsively and expressively

**MYTH:** You can’t do PECS with other programs

**FACT:** PECS can act as the communication component within any teaching program

<table>
<thead>
<tr>
<th>Program</th>
<th>How PECS can be incorporated</th>
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<tbody>
<tr>
<td>DTI</td>
<td>Requesting reinforcer learner wants to work for, choosing the order of activities (labeling pictures first, sequencing next, etc), choosing materials to use (which puzzle to do, which manipulatives to count with, which book to read)</td>
</tr>
<tr>
<td>TEACCH</td>
<td>Sabotaging known routines (removing some of the known materials from the bin, removing the finished bin, etc), can elicit a response or a comment</td>
</tr>
</tbody>
</table>

**MYTH:** Sign language is better

**Fact:**
- There is NO research indicating that learners with autism acquire large sign vocabulary
- There is NO research showing that groups using sign perform better than those using PECS, including any co-occurring impact on speech development

<table>
<thead>
<tr>
<th>PECS vs. Sign</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PECS</strong></td>
<td>Visually mediated</td>
<td>Material preparation</td>
</tr>
<tr>
<td></td>
<td>Easily understood in community and by peers</td>
<td>Portable?</td>
</tr>
<tr>
<td></td>
<td>Sequences remain visible</td>
<td>Virtual no prerequisites</td>
</tr>
<tr>
<td><strong>Sign</strong></td>
<td>Visually mediated</td>
<td>Typically requires an imitative repertoire</td>
</tr>
<tr>
<td></td>
<td>No external materials necessary</td>
<td>Fine motor skills may be atypical/learners use ‘homemade’ signs</td>
</tr>
<tr>
<td></td>
<td>Portable</td>
<td>Community knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sequencing of signs may be difficult</td>
</tr>
</tbody>
</table>
MYTH: Receptive Always Precedes Expressive in Language Development

FACT:
Receptive skills and expressive skills are initially acquired independently
• Children can learn to ask for "RED" candy before they can respond to “Give me the RED candy”
• For many children, the reward for requesting is much more powerful than the reward for complying

MYTH: There is no research to support PECS

FACT:
• The first publication was a descriptive report, including outcome for a large group of preschoolers- no control group
• Subsequent research has employed single-subject and group designs
• More research is underway with excellent initial results

PECS Research

• Beth Sulzer-Azaroff et.al.
  – The Picture Exchange Communication System (PECS): What do the data say (in press)
  – Conclusions
    • Improvement in communication skills for the vast majority of participants
    • When compared with other training methods those using PECS performed as well or better

MYTH: PECS doesn’t work

FACT:
• Research clearly suggests that PECS is an effective communication tool
• When difficulties arise, problems are often due to:
  – Lack of powerful reinforcers
  – Trainer error

For more information…

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