Picture Exchange Communication System (PECS)

Brief Introduction

The Picture Exchange Communication System (PECS) is used to teach learners to communicate in a social context. The PECS system is primarily used to help individuals who have difficulty speaking use a picture-based system as an aided-AAC system. Researchers have used PECS-based methods to improve communication, play, and behavioral skills (Ganz et al., 2013).

Description

Using PECS, learners are initially taught to give a picture of a desired item to a communicative partner in exchange for the item. There are six phases of PECS instruction: (1) "how" to communicate, (2) distance and persistence, (3) picture discrimination, (4) sentence structure, (5) responsive requesting, and (6) commenting.

PECS meets evidence-based criteria with 2 group design and 4 single-case design studies. According to the evidence-based studies, this intervention has been effective for preschoolers (3–5 years) to middle school-age learners (12–14 years) with ASD. PECS can be used effectively to address social, communication, and joint attention skills.

Brief Adapted from

Collet-Klingenberg, L. (2008). *Overview of Picture Exchange Communication System (PECS) for children and youth with autism spectrum disorders.* Madison, WI: University of Wisconsin, Waisman Center, The National Professional Development Center on Autism Spectrum Disorders.

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Matrix of PECS by Outcome and Age (years)

Social			Communication			Behavior			Joint Attention			Play			Cognitive			School Readiness			Academic			Motor			Adaptive			Vocational			Mental Health		
0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22
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Picture Exchange Communication System (PECS) Research Summary

Ages	Skills/Intervention Goals	Settings	Outcome
1–50 years	Language, communication, social	School, clinic, home	EBP

*The information found in the Research Summary table is updated yearly following a literature review of new research and this age range reflects information from this review.

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Research

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Picture Exchange Communication System (PECS)
Steps for Implementation

Step 1. Teaching the Physically Assisted Exchange

A. Arrange the training environment by providing one picture at a time, positioning the communication partner appropriately, and displaying the reinforcer in view of the learner.

B. The communication partner entices the learner by interacting with the reinforcer (e.g., eating food, playing with toy).

C. The communication partner opens her/his hand after the learner initiates the request.

D. As the learner reaches toward the desired item, the helper interrupts the reach, redirecting the learner to pick up the picture/symbol by providing a physical prompt.

E. When the learner has the picture/symbol in hand, the helper assists the learner in placing it in the open hand of the communication partner.

F. The communication partner hands the item to the learner and names the item as the communicative exchange is made.

G. The helper and communication partner do not provide the learner with any verbal prompts.

H. The communication partner immediately rewards the learner with the requested item after the exchange.

I. The helper fades physical assistance once the exchange steps are established with the learner.

J. The communication partner fades the open-hand prompt during the exchange once physical assistance is faded.

Step 2. Expanding Spontaneity
(Note: The following steps are completed by the communication partner unless otherwise noted.)

A. Arrange the environment by providing one picture at a time, positioning the communication partner appropriately, and displaying the reinforcer in view of the learner.

B. Entice the learner by interacting with the reinforcer (e.g., eating food, playing with toy).

C. As training progresses, move away from the learner so that the learner must move some distance to make the request.

D. The learner picks up the picture/symbol without prompting.

E. As training progresses, move the communication book away so that the learner has to move some distance to access the pictures/symbols.

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F.   Hand the item to the learner and name the item as the exchange is made.

G.   Provide no verbal prompts to the learner during the exchange.

H.   Immediately reward the learner with the requested item.

Step 3A. Discrimination Between a Highly Preferred Icon and a Distracter Icon

A.   Provide two pictures of two items (one preferred and one non-preferred) so that the learner must move to and pick up the correct (preferred) picture/symbol.

B.   Entice the learner with both items by interacting with them.

C.   The learner should have the picture/symbol in hand and move some distance to give it to the communication partner.

D.   Provide social reinforcement as soon as the learner touches the correct picture.

E.   Immediately hand the item to the learner and name it as the exchange is made.

F.   A variety of distracter items and target pictures should be provided in the communication book as the learner becomes able to discriminate between two or more pictures to increase the number of discriminations he/she must make.

G.   Provide no verbal prompts to the learner during the exchange.

H.   Pictures are moved around in the book (e.g., diagonal, vertical, horizontal).

Step 3B. Teaching Simultaneous Discrimination of Pictures—Discrimination Correction Procedure

A.   As the learner is able to discriminate between two or more pictures, add pictures to increase the number of discriminations he/she must make.

B.   Offer ample opportunities for the learner to make requests.

C.   Present two preferred items to the learner with two pictures as the learner becomes more successful at discriminating.

D.   When the learner makes an exchange, respond, "Okay, take it." If the learner reaches for the other item, block access and apply a correction sequence so that the learner must pick up the correct picture.

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Step 4. Error Correction Procedures

A. When the learner gives the wrong picture, pick up the correct picture, show it to the learner, and verbally label the picture.

B. When the learner looks at the picture, prompt the learner to give the correct picture by holding out a hand near the picture and physically prompting if necessary.

C. When the learner gives the correct picture, verbally acknowledge the correct response (e.g., "Yes, the ___."), but do *not* give the learner the object. Follow with a non-related directive (e.g., "Touch your head.").

D. When the learner follows the directive, entice him/her by interacting with the desired object (e.g., tasting food item, playing with toy).

E. When the learner touches the correct picture, provide verbal praise.

F. When the learner gives the correct picture, hand the desired object to the learner.

Step 5. Building Sentence Structure
(Note: The helper role is re-introduced in Step 5)

A. Place the "I want" symbol on the left side of the sentence strip.

B. When the learner takes the picture from the board, the helper guides the learner to place the picture next to the "I want" symbol on the sentence strip.

C. The helper guides the learner to take the sentence strip and hand it to the communication partner.

D. The communication partner reads the sentence strip, points to the symbols on the strip, and gives the requested item to the learner.

E. Replace the sentence strip in the communication book.

F. On repeated trials, the helper fades physical guidance until the learner is able to place the symbol next to the "I want" symbol.

G. After the exchange is established, the helper guides the learner to place the "I want" symbol on the sentence strip prior to placing the picture of the item requested.

H. On repeated trials, the helper fades physical guidance for placement of the "I want" symbol.

I. As the learner is able to point to the symbols as the communication partner reads the words, the communication partner pauses (e.g., 3–5 seconds) after saying, "I want," and before identifying the pictured item, thus leaving time for the learner to name/verbalize the item for him or herself.

J.   If learner verbalizes at all during the pause after the communication partner says, "I want," the communication partner provides the requested item immediately *and* provides significant verbal praise for vocalization.

Step 6. Responding to, "What do you want?"

A.   Simultaneously point to the "I want" card and ask, "What do you want?"

B.   As the learner is able to complete the sentence "I want" with a picture, add an increasing delay between the point and the verbal cue, "What do you want?"

C.   Once the learner demonstrates that he or she is able to beat the point prompt by responding to the verbal cue with the "I want" symbol and the desired picture, provide social praise.

D.   Offer ample opportunities for the learner to answer the question, "What do you want?" along with opportunities for the learner to initiate requests without prompting.

Step 7. Commenting in Response to a Question

A.   Gather material, including the items already in the learner's requesting vocabulary (but not favorite items), along with pictures of the items, and a new picture/symbol for a new sentence starter such as "I see."

B.   Hold an item, then place the "I see" symbol and the picture of the item near (but not on) the sentence strip.

C.   Hold up the item and ask, "What do you see?" then point to the "I see" symbol.

D.   If the learner does not pick up the "I see" symbol after 3–5 seconds, guide him/her to pick it up and place it on the sentence strip.

E.   Wait 5 seconds to see if the learner picks up and places the picture of the item on the sentence strip.

F.   If the learner completes Step 5, say, "Yes, I see a _____."

G.   If the learner does not complete Step 5, guide him/her to do so and then say, "You see a _____."

H.   Reinforce the learner for Steps 5 or 7 with verbal praise or other reinforcement (but not with the item).

I.   As the learner is able to assemble and use the "I see" symbol to respond to the question, "What do you see?," fade cues.

J.   As the learner is able to assemble/use the exchange to answer "What do you see?," increase the number of pictures so that the learner discriminates between pictures in the assembly process.

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Step 7. Commenting in Response to a Question—Differentiating Responses to Questions

A. As the learner responds reliably to "What do you see?," place the "I see" symbol below the "I want" symbol in the left corner of the communication book.

B. As the learner is able to respond reliably to "What do you see?," intermix questions "What do you see?" with "What do you want?"

C. When the learner requests appropriately, give the requested item.

D. When the learner labels/comments appropriately, respond with a verbal confirmation and alternate reinforcement (not the item itself).

Step 8. Promoting Spontaneous Commenting and Building in Attributes and Modifications

A. As the learner demonstrates the ability to make requests and answer questions, eliminate questioning to promote spontaneous commenting.

B. As the learner demonstrates competencies in Step 6 above, provide opportunities for individualization of requests by making available pictures for attributions and/or modifications. Attributes/modifiers can be added any time after Step 4.

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