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ScienceDirect
Research in Developmental Disabilities 28 (2007) 71–83
Research in Developmental Disabilities

Assessing correspondence following acquisition of an exchange-based communication system

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Received 6 September 2005; received in revised form 15 December 2005; accepted 23 December 2005

Abstract

Two students with developmental disabilities were taught to request six snack items. Requesting involved giving a graphic symbol to the trainer in exchange for the matching snack item. Following acquisition, we assessed the correspondence between requests and subsequent item selections by requiring the student to select the previously requested snack item from an array containing all six items. The effects of acquisition training were evaluated in a multiple-probe across subjects design. Acquisition was achieved in from 9 to 29 trials per item. Following acquisition, Jason showed a high level of correspondence between requesting and selecting, but Ryan required additional training to achieve correspondence. These data support the use of exchange-based communication systems, but suggest that some students may require explicit correspondence training.

Keywords: Exchange-based communication; Requesting; Acquisition; Correspondence

1. Introduction

Students with developmental disabilities often fail to develop speech and are therefore candidates for alternative modes of communication (Reichle, Beukelman, & Light, 2002).

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doi:10.1016/j.ridd.2005.12.002

Various alternatives to speech have been taught to individuals with developmental disabilities, including the use of unaided approaches such as manual signs (Carr & Kologinsky, 1983; Duker, Kraaykamp, & Visser, 1994; Sundberg, 1981), and aided approaches such as communication boards (Reichle & Brown, 1986; Rodi & Hughes, 2000) and voice-output communicative devices (Schepis, Reid, Behrmann, & Sutton, 1998; Sigafoos, Didden, & O'Reilly, 2003).

Aided approaches can be further distinguished into those that are selection-based and those that are exchange-based. With selection-based approaches, the individual selects graphic symbols from a display by pointing or scanning. Selection-based systems have been successfully taught to individuals with developmental disabilities (Reichle, York, & Sigafoos, 1991) and recent evidence suggests that exchange-based communication may also represent a promising mode of communication for some individuals with developmental disabilities (Bondy & Frost, 2001; Charlop-Christy, Carpenter, Le, LeBlanc, & Kellet, 2002).

1.1. Exchange-based communication systems

With exchange-based communication, the individual is taught to remove a graphic symbol from a communication board and give it to the communicative partner. The act of exchanging the graphic symbol with the partner is considered functionally equivalent to speaking a word or phrase. For example, during snack time at school, the student might be taught to pick up a graphic symbol (e.g., a line drawing of a raisin or an orange) and give it to the teacher. The teacher accepts the graphic symbol and gives the student the corresponding real object. In this example, the exchange of the graphic symbol is meant to function as a request—equivalent to saying *I want the raisin* or *I want the orange.*

Bondy and Frost (2001) described a comprehensive training protocol for teaching exchange-based communication to individuals with developmental disabilities. Their Picture-Exchange Communication System (PECS) begins by teaching the individual to make simple requests. Specifically, the individual is first taught to exchange a single graphic symbol to gain access to a corresponding preferred object. For example, a preferred food item might be placed in view, but out of reach. In this context, the individual is taught to initiate communication by picking up the graphic symbol and handing it to the communicative partner. The partner reinforces this response as a request by giving the individual the corresponding preferred item. Once this basic exchange is mastered, additional graphic symbols representing other preferred items are introduced and more complicated forms of discriminated requesting are taught (Bondy, Tincani, & Frost, 2004).

Exchange-based communication has been successfully taught to individuals with developmental disabilities. Ganz and Simpson (2004), for example, taught picture-exchange communication to three children with developmental disabilities. In accordance with the PECS protocol, the children were first taught to give graphic symbols to the communicative partner in exchange for corresponding preferred objects. Initially the exchange response was prompted using the least amount of physical guidance that was necessary to ensure the child handed the graphic symbol to the communicative partner. Over successive opportunities, the amount of physical guidance was gradually reduced to promote independent responding. Using this procedure, all three children showed rapid acquisition of the initial exchange and progressed to more advances stages of training. Other investigators have reported similar results (Charlop-Christy et al., 2002; Kravits, Kamps, Kemmerer, & Potlucek, 2002; Magiati & Howlin, 2003; Schwartz, Garfinkle, & Bauer, 1998; Tincani, 2004). Together these studies suggest that exchange-based systems may offer a viable communicative alternative for some individuals with