

## Background

Naturalistic interventions are the use of intentional and systematic strategies to instruct young children with disabilities during everyday ongoing activities and routines.

Over the years, many terms (names) have been used to describe or refer to naturalistic interventions including:

- incidental teaching
- embedded instruction
- naturalistic instruction
- milieu teaching
- transition-based teaching
- activity-based intervention

## Purpose

The purpose of this overview is to provide a summary of systematic reviews of naturalistic interventions for young children under the age of five years old who have or are at risk for delays or disabilities.

## Objectives

- Understanding how naturalistic interventions have been operationalized
- Identifying common characteristics and components of naturalistic interventions
- Drawing conclusions about their effects for young children with disabilities

## Methods

This synthesis is an overview of reviews of naturalistic interventions for young children with disabilities.

To complete this overview, we searched electronic databases and other sources for published articles that contained reviews of studies on naturalistic interventions for young children under the age of five years old who have or are at risk for disabilities or developmental delays.

We then synthesized the findings across the reviews to formulate conclusions on the effects of the interventions.

## Results

We searched the literature in December 2023 for systematic reviews of naturalistic interventions for young children under the age of five years old who have, or are at risk for disabilities or developmental delays.

We located seven reviews with 102 publications involving over 900 young children with delays or disabilities.

Most of the studies were conducted in inclusive preschool classrooms during free play or center-time activities.

## Findings

The reviews showed greater than 90% of children gained new skills through naturalistic interventions. These skills were often related to communication or play.

Many studies reported the new skills were maintained over time and generalized to new behaviors, people, or settings.

A summary of the findings across reviews is shown in Table 1 below.

Collectively, the findings from this overview provides additional evidence of the positive and robust effects of the intervention for most young children with or at risk of disabilities or delays.

Table 1. Child Participant Target Skill Acquisition Reported in Reviews of Naturalistic Interventions for Young Children with Disabilities

Review	Research Design	Target Skills	Participants Reported to Have Acquired Target Skill(s) at <b>Primary Endpoint</b>	Participants Reported to Have Shown <b>Generalization</b>	Participants Reported to Have Shown <b>Maintenance</b>
Rakap (2011) <i>u</i> = 16	SCD ( <i>u</i> = 15)	PA/C ( <i>u</i> = 9) L/C ( <i>u</i> = 5) M/A ( <i>u</i> = 4) S-E ( <i>u</i> = 4)	55 of 60 (92%) participants from 15 SCD studies	12 of 15 (80%) participants from 5 SCD studies	17 of 18 (94%) participants from 6 SCD studies
Rakap (2014) <i>u</i> = 15	SCD ( <i>u</i> = 15)	L/C ( <i>u</i> = 14) S-E ( <i>u</i> = 1)	66 of 70 (94%) participants from 15 SCD studies	27 of 34 (79%) participants from 8 SCD studies	25 of 25 (100%) participants from 5 SCD studies
Snyder (2015) <i>u</i> = 45	SCD ( <i>u</i> = 40) GD ( <i>u</i> = 3)	PA/C ( <i>u</i> = 18) L/C ( <i>u</i> = 26) M/A ( <i>u</i> = 12) S-E ( <i>u</i> = 8)	207 of 211 (98%) participants from 40 SCD studies and 3 GD studies	47 of 50 (94%) participants from 18 SCD studies	56 of 61 (92%) participants from 20 SCD studies
Lane (2016) <i>u</i> = 24 <sup>1</sup>	SCD ( <i>u</i> = 12)	L/C ( <i>u</i> = 24)	4 of 6 (67%) SCD studies using demonstration designs meeting WWC standards showed “strong effects”  3 of 6 (50%) SCD studies using comparison designs meeting WWC standards showed “differentiated effects”	n/r	n/r
Dubin (2020) <i>u</i> = 25 <sup>2</sup>	SCD ( <i>u</i> = 7) GD ( <i>u</i> = 13)	L/C ( <i>u</i> = 25)	20 of 25 (80%) participants from 7 SCD studies “sufficient rigor”  7 of 13 (54%) GD studies with “sufficient rigor” showed small to large positive effect sizes	Some evidence in 5 of 7 (71%) SCD studies  Some evidence in 11 of 13 (85%) GD studies	Some evidence in 3 of 7 (43%) SCD studies  Some evidence in 2 of 13 (15%) GD studies
Gulboy (2023) <i>u</i> = 10	SCD ( <i>u</i> = 10)	PA/C ( <i>u</i> = 5) L/C ( <i>u</i> = 5) M/A ( <i>u</i> = 3) S-E ( <i>u</i> = 8)	21 of 21 (100%) participants from 10 SCD studies	20 of 20 (100%) participants from 9 SCD studies	8 of 8 (100%) participants from 4 SCD studies
Lane (2023) <i>u</i> = 38 <sup>3</sup>	SCD ( <i>u</i> = 23)	L/C ( <i>u</i> = 34) S-E ( <i>u</i> = 19)	4 of 4(100%) participants from 1 SCD study	3 of 4 (75%) participants from 1 SCD study	n/r

Key: SCD = Single Case Design Study; PA/C = Pre-Academic/Cognitive; L/C = Language/Communication; M/A = motor/adaptive; S-E = Social-Emotional; GD = Group Design WWC = What Works Clearinghouse; 1 - 12 SCD studies met WWC standards with or without reservations and were synthesized for review (11 SCD studies did not meet standards); 2 - 7 SCD studies and 13 GD studies had “sufficient rigor” and were synthesized for review (4 SCD and 1 GD study did not meet standards); 3 - 1 SCD study met rigor standards and were synthesized for review (22 studies did not meet rigor standards)

## References

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- Dubin, A. H., & Lieberman-Betz, R. G. (2020). Naturalistic interventions to improve prelinguistic communication for children with autism spectrum disorder: A systematic review. *Review Journal of Autism and Developmental Disorders*, 7, 151-167. <https://doi.org/10.1007/s40489-019-00184-9>
- Gulboy, E., Yucesoy-Ozkan, S., & Rakap, S. (2023). Embedded instruction for young children with disabilities: A systematic review and meta-analysis of single-case experimental research studies. *Early Childhood Research Quarterly*, 63, 181-193. <https://doi.org/10.1016/j.ecresq.2022.12.014>
- Lane, J. D., Graley, D., Shepley, C., & Lynch, K. M. (2023). Systematic review of naturalistic language interventions in schools: Child- and adult-level outcomes for verbal communication. *Remedial and Special Education*, 44(4), 319-331. <https://doi.org/10.11177/07419325221125887>
- Lane, J. D., Lieberman-Betz, R., & Gast, D. L. (2016). An analysis of naturalistic interventions for increasing spontaneous expressive language in children with autism spectrum disorder. *The Journal of Special Education*, 50(1), 49-61. <https://doi.org/10.1177/0022466915614837>
- Rakap, S. & Parlak-Rakap, A. (2011). Effectiveness of embedded instruction in early childhood special education: A literature review. *European Early Childhood Education Research Journal*, 19(1), 79-96. <https://doi.org/10.1080/1350293X.2011.548946>
- Rakap, S., & Rakap, S. (2014). Parent-implemented naturalistic language interventions for young children with disabilities: A systematic review of single-subject experimental research studies. *Educational Research Review*, 13, 35-51. <https://doi.org/10.1016/j.edurev.2014.09.001>
- Snyder, P. A., Rakap, S., Hemmeter, M. L., McLaughlin, T. W., Sandall, S., & McLean, M. E. (2015). Naturalistic instructional approaches in early learning: A systematic review. *Journal of Early Intervention*, 37(1), 69-97. <https://doi.org/10.1177/1053815115595461>

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