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Peer-mediated Interventions: More Than Just Play Skills



Presented by:

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Peer-Mediated Interventions

Presented by Michele LaMarche, BCBA and Miranda Schehr, BCaBA



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Today's Objectives

- Upon completion of Peer Mediation, participants will be able to:
 1. Learn ways to train peers so they are more effective.
 2. Learn a variety of ways to use peers to facilitate instruction and learning for students with ASD.
 3. Understand the effectiveness of specific interventions based upon recently published research.



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Inclusion = Social Relationships

- Access to socially active peers or social environments does NOT guarantee that social interactions will naturally occur between typically developing students and students with autism for 3 main reasons:
 1. Disruptive behavior does not decrease until the student with ASD learns to initiate on his/her own.
 2. Many learners with ASD are unable to attend to the relevant social cues and need explicit instruction/prompting to do so.
 3. Learners with ASD rarely initiate social interactions and have a lack of responsiveness , inappropriate play, noncompliance, little language use and stereotypy.





Data on Social Acceptance

- Peer Rating Scales are often used by studies to determine how students with ASD are socially accepted in a general classroom.
- When using sociometric techniques 5 categories of children and youth emerge (elksin book references Coie, Dodge & Coppotelli 1982, Thompson, Grace & Cohen 2001)
 1. Popular children
 2. Accepted or average children
 3. Rejected children
 4. Neglected children
 5. Controversial children
- Approximately 20% of children/adolescents do not fit into one of the 5 major categories



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Popular children

- Approximately 15% of children and adolescents
- Highly sociable
- Rated highly by just about everyone



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Accepted/average Children

- Approximately 45% of children/adolescents fall within this category
 - Share many of the characteristics of their more popular counterparts
 - Regarded highly by many peers
 - A few children may dislike them
 - “normal, healthy children” Thompson et al



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Rejected Children

- Approximately 12% of children/adolescents
- Peers actively dislike
- Large numbers of negative ratings
 - Rejected-submissive
 - Rejected aggressive
 - Don't just 'grow out of'
 - Takes purposeful intervention by parents and educators to reroute



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Neglected Children

- 4% of children/youth
- Neither strongly liked or disliked
- To teachers/parents they appear similar to accepted children
- Usually has at least 1 peer
- Typically remain invisible to the rest of their peer group

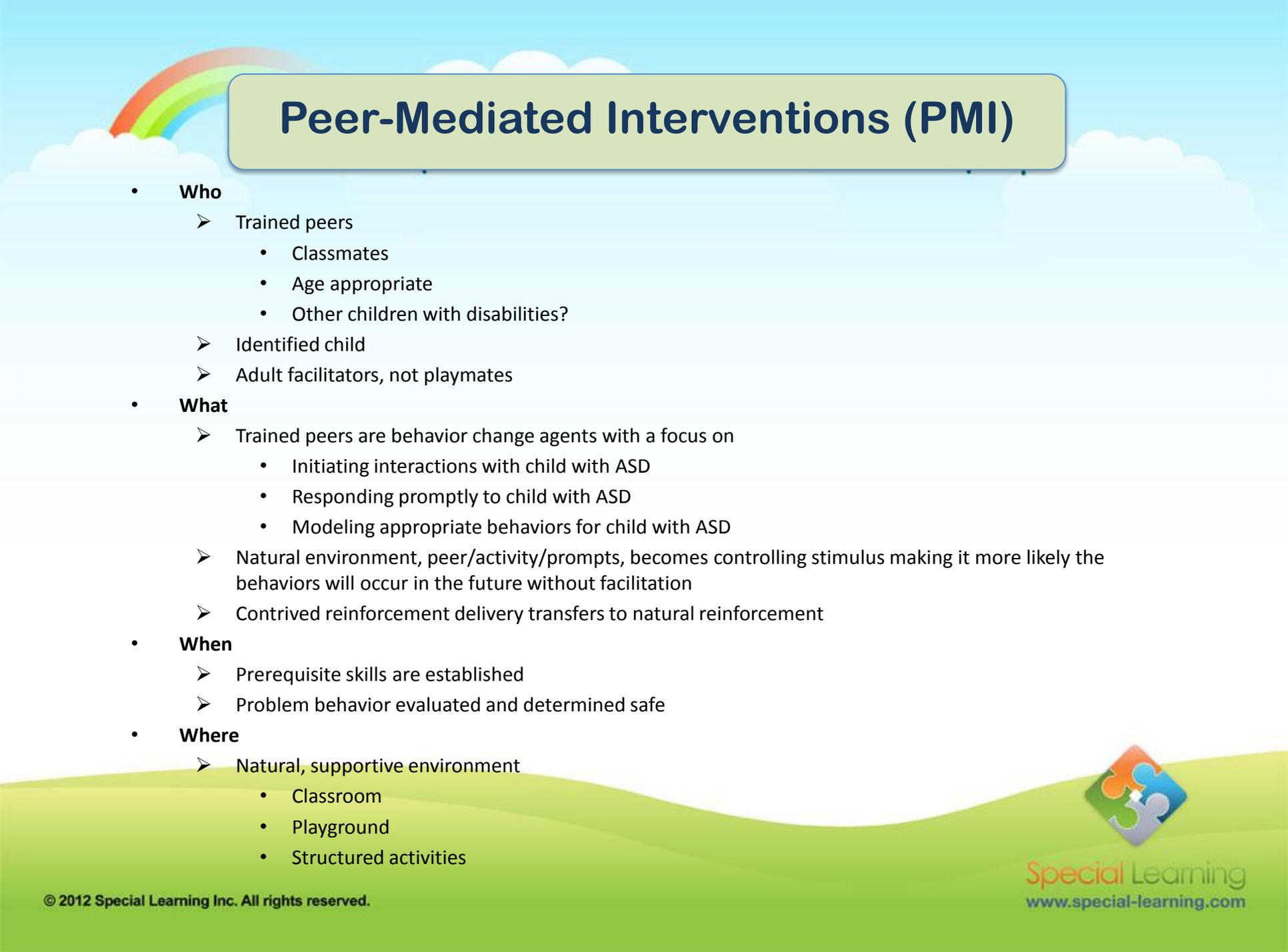




Controversial Children

- Approximately 4% of children/adolescents
- Extremely well liked by some peers
- Extremely disliked by others
- Get mixed positive and negative responses
- Often includes:
 - Class clowns
 - Queen bees
 - Bullies
 - Rebels
- These children understand how they affect others and use this knowledge to their advantage





Peer-Mediated Interventions (PMI)

- **Who**
 - Trained peers
 - Classmates
 - Age appropriate
 - Other children with disabilities?
 - Identified child
 - Adult facilitators, not playmates
- **What**
 - Trained peers are behavior change agents with a focus on
 - Initiating interactions with child with ASD
 - Responding promptly to child with ASD
 - Modeling appropriate behaviors for child with ASD
 - Natural environment, peer/activity/prompts, becomes controlling stimulus making it more likely the behaviors will occur in the future without facilitation
 - Contrived reinforcement delivery transfers to natural reinforcement
- **When**
 - Prerequisite skills are established
 - Problem behavior evaluated and determined safe
- **Where**
 - Natural, supportive environment
 - Classroom
 - Playground
 - Structured activities



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PMI History

- Typically developing children are selected and trained to teach skills
- Was initially used with withdrawn preschool children
- Has more recently been successfully shown with students with Autism and other developmental disabilities





What Literature Tells us

- Peer-Mediated Instruction and Intervention (PMII)
- Works in both general and special education settings
- Most effective when:
 - Students are taught to:
 - Be systematic
 - Elicit responses
 - Provide feedback
- Research indicates PMII should NOT be used when teaching “new” instructional content
- Frequency varies:
 - 3-4 times per week
 - Daily
 - Weekly
- Cooperative Learning formats are most successful



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4 Common Characteristics of PMI

1. Assignment and training of students
2. Students instruct one another
3. Teachers monitor and facilitate
4. Increase academic and social goals for all

Key is Flexibility



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Advantages of PMI

- Peers are more natural role models
- May be better accepted by students with ASD than adults
- Natural social interaction environments can be used
- Typical social interaction behaviors
- Increase levels of initiations and responses that can have lasting effects



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Disadvantages of PMI

- Prompts are sometimes necessary
- Need peers that are receptive to training
- Takes some time to well-train peers
- Not enough evidence of generalization and maintenance of interaction
- Most research studies do not provide enough information to be replicated





10 Steps to Implement PMI

1. Collect baseline
2. Graph findings
3. Identify goals
 - Determine if skills need to be taught prior
4. Select peers
5. Train peers
6. Implement intervention
 - Phase change line
7. Graph findings
8. Analyze effectiveness
 - Treatment fidelity
 - Social Validity
9. Generalization
10. Fluency



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Social Skills Assessment Tools

- Autism Social Skills Profile (ASSP)
- Social Skills Checklist, Quill, K.A. 2000
- Social Skills Rating System (SSRS)
- Multidimensional Anxiety Scale for Children (MASC)
- Social Anxiety Scale for Children (SAS-C)
- Social Anxiety Scale for Adolescents (SAS-A)
- Behavioral Assessment Scale for Children (BASC)
- Adaptive Behavior Assessment – Second Edition (ABAS-II)
- Multidimensional Self-Concept Scale (MSCS)



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Common Skills Trained to Peer for Mutual Benefit

- Initiating interaction
- Responding to identified peer
- Sharing
- Helping identified peer
- Respond in group
- Respond to teacher
- Complete a task
- How to play appropriately with specific toys
- Activities on the playground
- Commenting during play
- Generalization outside of intervention sessions



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Other Specifics to Train Peers

- Peer expectations
- Make sure identified child is attending, get attention first
- Offer choices
- Model appropriate behaviors
- Reinforce identified child; reinforce attempts
- Narrate play
- Take turns
- Comment





Selecting Peers

- General Rules
 - Demonstrate skill sets they model
 - Demonstrate skill sets to tutor and lead
 - Motivated, interested, listens well to teachers
 - Often recommended by teachers
 - Identify trained peer group and generalization peer group
- Typical peers
 - Classmates
 - Neighbors
 - Extended family
- Identified peers
 - Peers with other disabilities
 - Similar cognitive level
 - Strengths and differences





Training Peers: Rules to Follow

- Training formats (*ongoing*)
 - School
 - District
 - Faculty
 - Parents
 - Students
 - Individual
 - Group
 - Classroom
- Training topics
 - Disability awareness and support
 - What is autism
 - Training on specific, identified child
 - Possible accommodations
 - Skills the child needs help with
 - Training on skills they need to successfully interact
 - Initiate
 - Respond
 - Reward for successful interaction





Being Good

- Being good for the sake of being good?
- Reinforcement procedures
 - Identified child
 - Peer
 - Classroom
- Good Citizenship Program Model
 - Whole class model
 - Assessment
 - Systematic training for all
 - Group contingency and individual reinforcement systems
 - Measurement of progress
 - Generalization
 - Fluency
 - Spontaneity
 - Evaluate, Define, Repeat
 - Modify program components
 - Expand into new skills

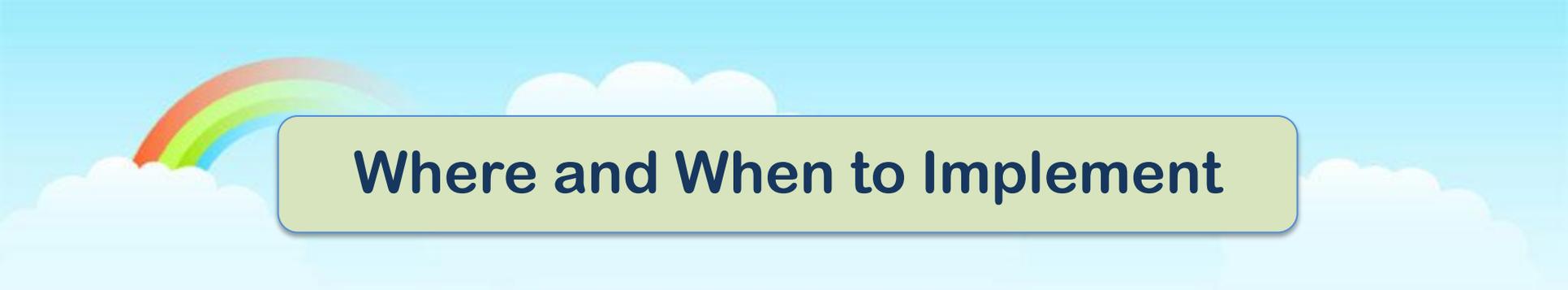




Data Collection

- What to take data on:
 - Frequency of interactions
 - Duration of interactions
 - Quality of interactions
 - Application of peer interactions outside of intervention
 - Change in identified child's social behaviors outside of intervention with trained peers
 - Generalization to other environments and with other peers (not trained)
- Probes
- Partial and Whole – Interval



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Where and When to Implement

- Natural but structured setting
- Pull outs
- Home play dates
- Recess
- Specials, related service sessions
- Recreation room

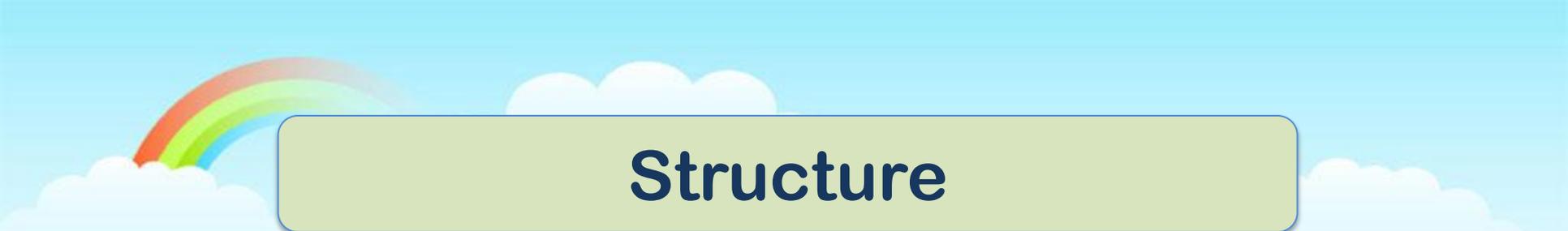




Cooperative Learning

- Definition:
 - Students depend on each other
 - Work toward a common goal
- Most successful model according to literature
- Academic activity examples:
 - Writing a report
 - Worksheets
 - Preparing a presentation
- Social skill examples:
 - Initiate interactions
 - Responding to others attempts
 - Staying on topic
 - Eye Contact and attention toward others





Structure

- Dyads – work in pairs
- Triads—work in groups of 3 with 2 peers
 - Reverse Role
 - Class-wide Peer Tutoring
 - Cross-age Tutoring
- Small cooperative learning groups
 - Team Cooperative Learning
 - *Structural continuity* through entire lesson
 - Group and Re-group
 - *Structural change* through lesson





Team Cooperative Learning: STAD

- Student Teams-Achievement Divisions (STAD)
 1. Reward criteria determined
 2. Baseline quiz/test
 3. Teacher teaches lesson
 4. Students work in teams
 - Make sure all master material
 5. Students take quiz/test weekly
 6. Scores compared to baseline
 7. Earn points if score meets or exceeds baseline
 8. Individual scores summed by team
 9. Teams rewarded based on criteria
- Employs “*Group Contingency*” Method
- Developed by researchers at Johns Hopkins University



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Team Cooperative Learning: CIRC

- Cooperative Integrated Reading and Comprehension (CIRC)
 - Used to teach reading and writing
- Steps to follow:
 1. Teacher instructs
 2. Team practice
 3. Individual practice
 4. Peer assessment
 5. Individual testing





Team Cooperative Learning: TGT

- Teams Games Tournaments (TGT)
 - Developed by DeVries & Slavin, 1978
 - Almost identical to STAD
- Steps:
 1. Reward criteria determined
 2. Teacher teaches lesson
 3. Weekly team practice
 4. Weekly tournaments
 - 3-person tournament table – each person represents their team
 - Compete individually against others at your table
 5. Earn points for your team
 - Equal opportunity for point-earning success
 - Tournament table of comparable ability
 6. Teams rewarded based on criteria
- Employs “Group Contingency” Method





Group and Re-Group Jigsaw

- Developed by Aronson and colleagues
- *Jigsaw* steps:
 1. Students placed into 3 – 6 member (original) groups
 - Each member of the group assigned to be an “expert” on a section of the lesson
 2. Students individually read their section
 3. Meet in “expert groups” with members from other groups who read the *same* section
 - Discuss, identify learning points
 4. Return to original group to instruct about the section in which they became an expert

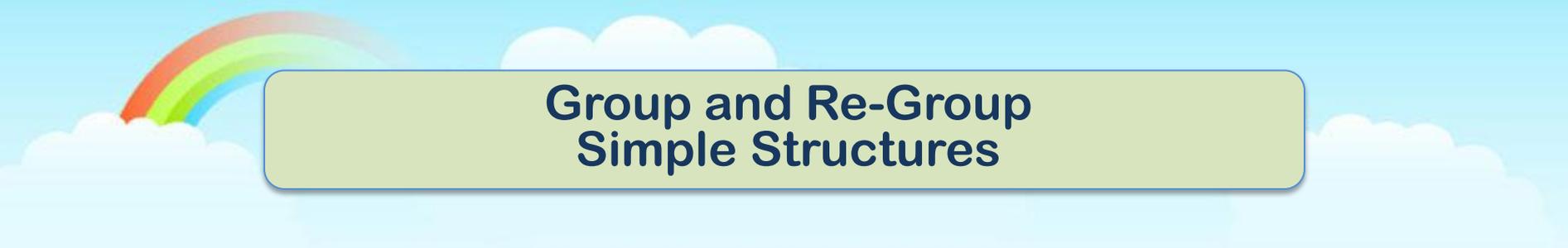




Group and Re-Group TAI

- Team Assisted Individualization (TAI)
 - Combination of cooperative learning and individualized instruction
- Steps:
 - Students placed in teams
 - Baseline quiz/test
 - Each student follows instructional sequence within lesson based upon their test performance
 - Proceed at their own pace
 - Daily team checks – practice sheets
 - Earn points for team
 - Passing final tests
 - Completing multiple units
 - Handing in assignments
 - Final unit tests are taken individually
- Employs “*Group Contingency*” method



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Group and Re-Group Simple Structures

- Developed by Kagan
 - Over 14 *cooperative* classroom structures instead of competitive
- *Simple Structures*
 - More positive social interactions
 - Not pitted against each other
- Examples
 - Numbered Heads Together (NHT)
 - Co-op Co-op



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Common Academic Target Behaviors

- Learning and comprehension
 - Reading
 - Math
 - Vocabulary





Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers

- Kamps et al 2002
- 5 students with Autism, 51 general education peers
- 2-part study; single-subject reversal design
- Part 1
 - 3 conditions
 - Social skills
 - Cooperative learning
 - Control group





Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers

- Part 2
 - Generalization among 3 peer groups
 - Peers who participated in cooperative learning groups during part 1
 - Peers who participated in social skills groups during part 1
 - Familiar peers who had not received training



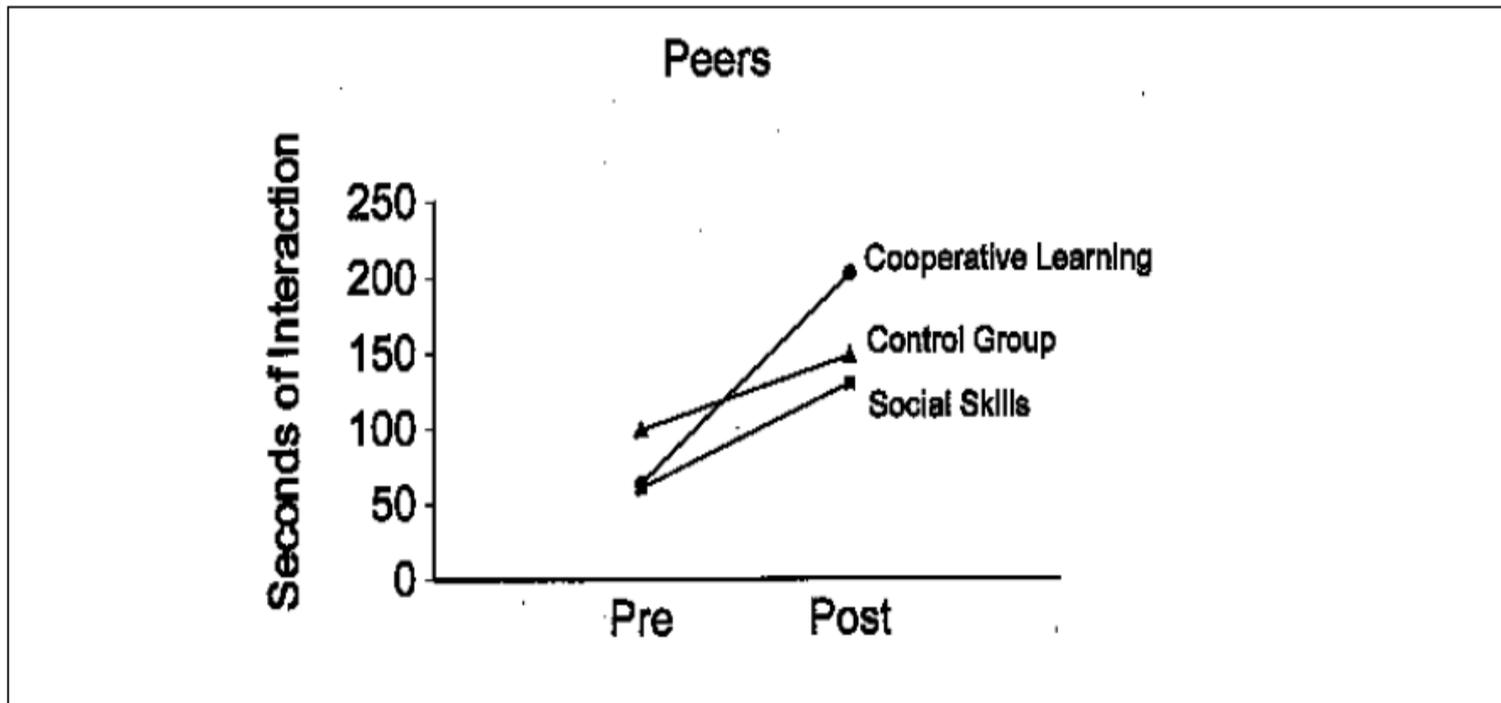


Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers

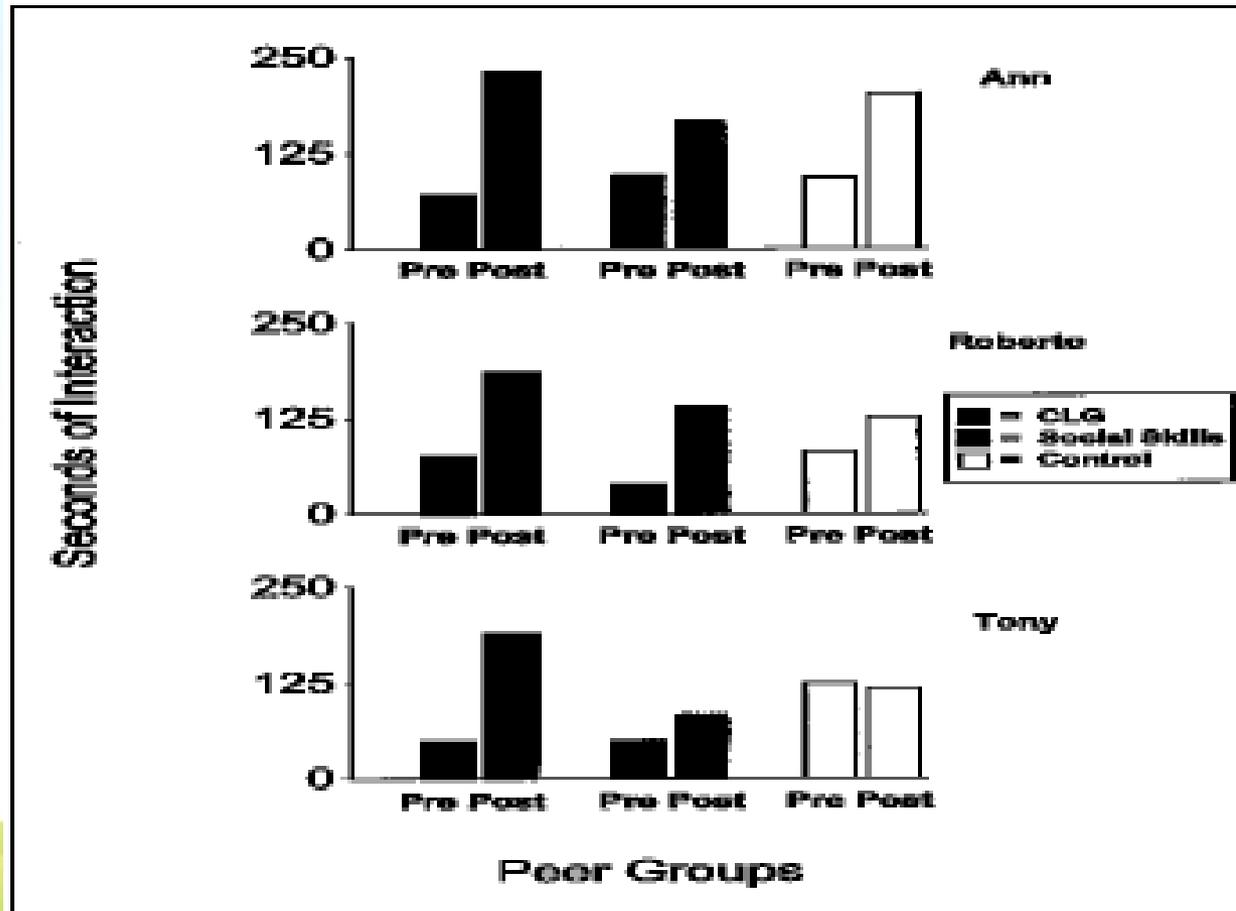
- Dependent variables
 - Frequency of interactions, mean length of interactions, total duration of social interaction during 5-minute probes
 - Frequency of initiations to the target students by the peers
- Results
 - All intervention components showed an increase in social interactions between students with autism and their peers across academic and social context
 - Peer mediation programs facilitated generalization of interaction skills to novel settings shown by the probe of social behavior the following spring



Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers



Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers





Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers

- Part 2
 - 2-year generalization
 - Peer Mediation Programs included
 - Social skills/games/play groups
 - lunch buddy groups
 - Recess buddy programs
 - Tutoring activities
 - Dependent variables
 - Social interaction duration
 - Reciprocal interaction
 - Toy play
 - On-topic verbalizations





Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers

Results of part 2

- Increase over time with trained peers
- Most notable increases were in the areas of:
 - Duration of interaction
 - Reciprocal interaction
 - Smaller change noticed with on-topic language
- Increase over time with familiar peers
- All behaviors occurred with less frequency with stranger peers with decreases in duration and increases in reciprocal interactions





Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers

- Discussion
 - Enough information to closely replicate part 1 of the study
 - The study authors give detailed information regarding:
 - the curriculum used to train the peers
 - what peer training looked like
 - how often peer training occurred
 - how the peers were reinforced or prompted to demonstrate the skills
 - What the skills were by category and specific skill for social skills
 - Activity descriptions for peer tutoring activities





Peer Training to Facilitate Social Interaction for Elementary Students with Autism and their Peers

- Discussion (continued)
- Students who received intervention over multiple years showed more generalization.
- Appropriate use and play with toys remained stable and appropriate regardless of the peer groups
- Outcomes suggest generalization of skills by both students with autism and peers leads to social skills becoming naturally reinforcing for students with autism





Peer Mediated Intervention:
Attending to, commenting on and acknowledging the
behavior of pre-schoolers with Autism

- Goldstein, Kaczmarek, Pennington, Shafer 1992
- 5 students with ASD; 10 typical peers
- Created 5 triads (2 peers:1 student with ASD)
- ABCB reversal design
 - Withdrawal/reversal was with the peer's behavior





Peer Mediated Intervention

Attending to, commenting on and acknowledging the behavior of pre-schoolers with Autism

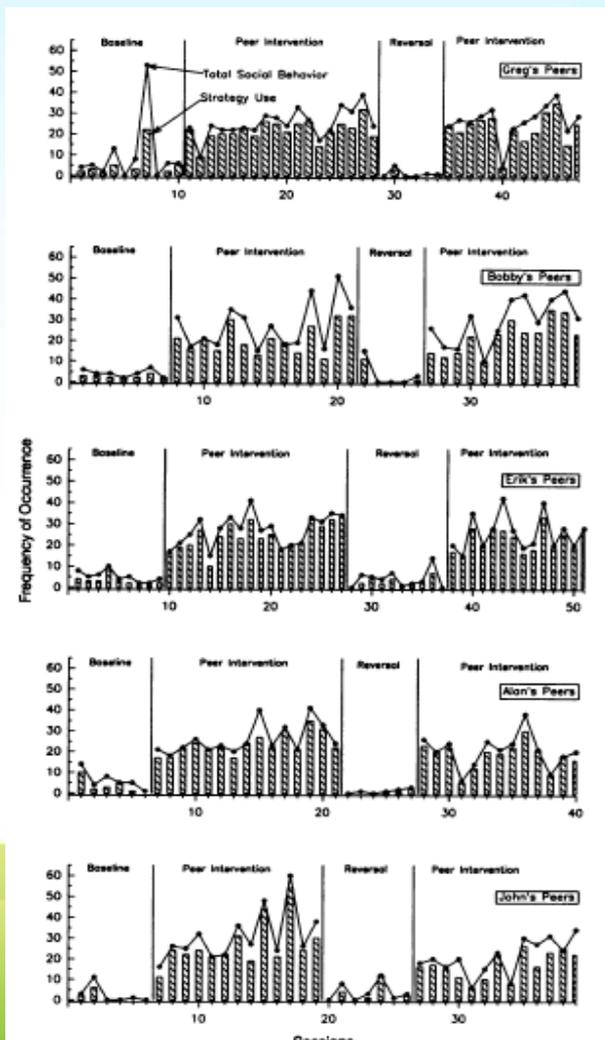
- 8 verbal Target behaviors
- 3 nonverbal target behaviors
- 3 additional nonverbal behaviors for just the targeted children
- After baseline, peers were trained in small groups through 6 direct instruction lessons
- Rewards were provided at the end of training sessions to peers who followed directions and listened attentively



Peer Mediated Intervention

Attending to, commenting on and acknowledging the behavior of pre-schoolers with Autism

Peer's social behavior





Peer Mediated Intervention

Attending to, commenting on and acknowledging the behavior of pre-schoolers with Autism

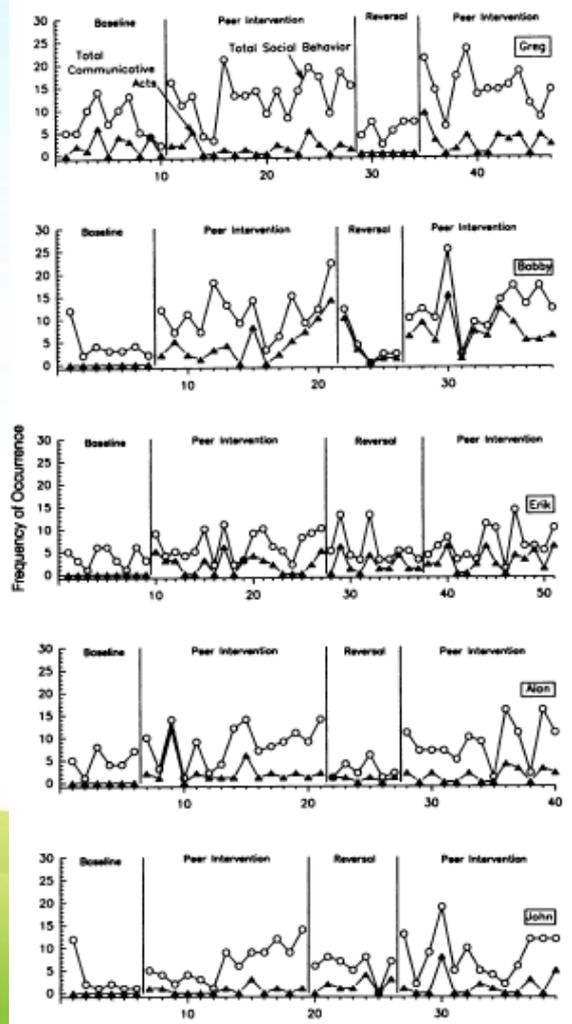
- Reversal Phase
 - During the reversal phase, some interactions between peers and targeted student occurred
 - Peers were prompted and verbally praised only for interactions with other peers
 - Targeted students were praised for positive interactions in all phases

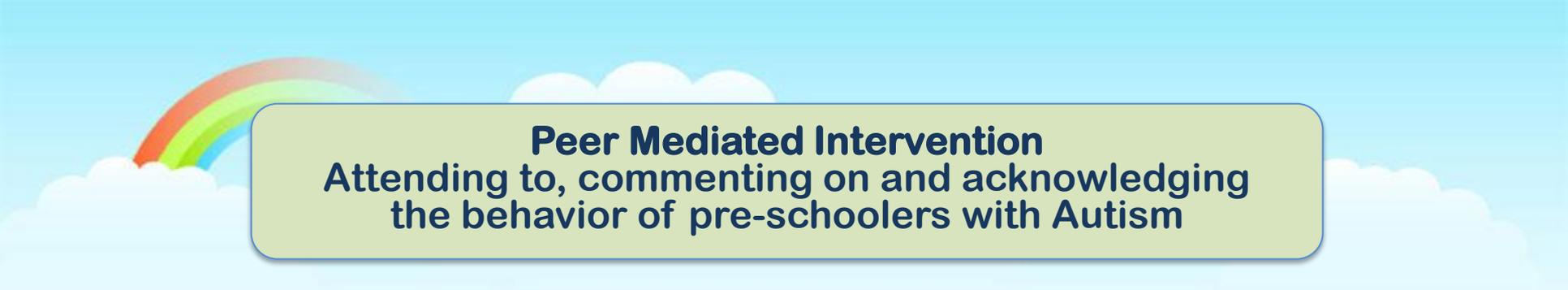


Peer Mediated Intervention

Attending to, commenting on and acknowledging the behavior of pre-schoolers with Autism

Target student's social behavior



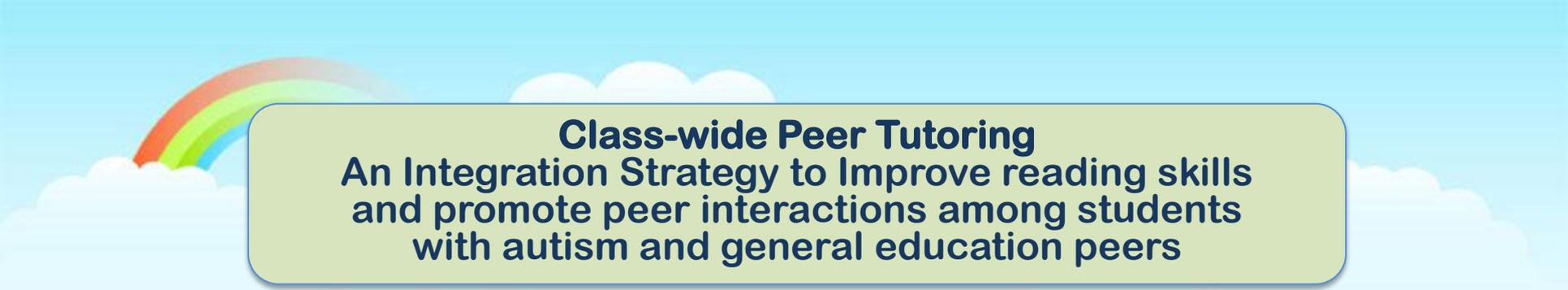
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Peer Mediated Intervention

**Attending to, commenting on and acknowledging
the behavior of pre-schoolers with Autism**

- During the 5-minute play sessions, an average of 5 social behaviors were directed to the targeted students
- During peer-intervention conditions the average ranged from 20.5 to 26.5 social behaviors were directed to the targeted students



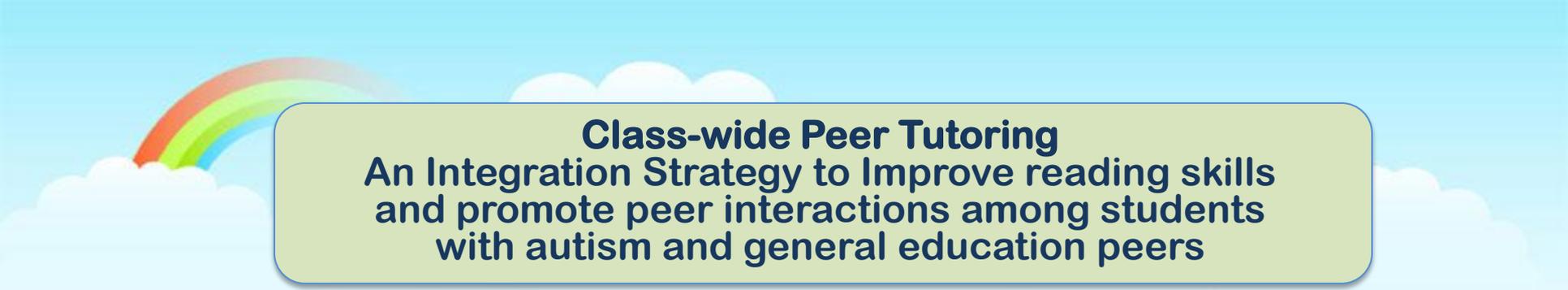


Class-wide Peer Tutoring

An Integration Strategy to Improve reading skills and promote peer interactions among students with autism and general education peers

- Kamps, Barbetta, Leonard and Delquadri 1994
- 3 male students with autism and their peers
 - 2 boys were 8, 1 boy was 9
 - 2nd and 3rd grade general education classroom
- Dependent measures
 - Rate of words correctly/reading errors
 - Responses to reading comprehension questions
 - Social interaction
- Multiple baseline across subjects with a reversal



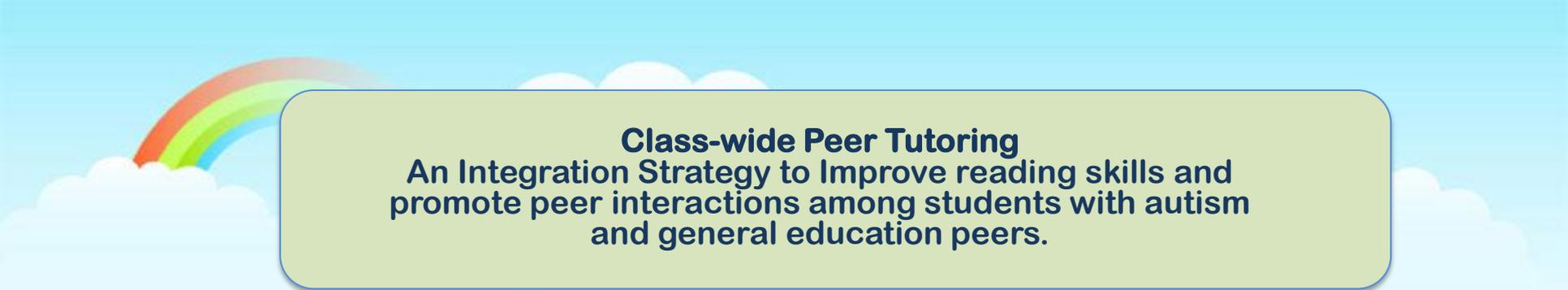


Class-wide Peer Tutoring

**An Integration Strategy to Improve reading skills
and promote peer interactions among students
with autism and general education peers**

- Baseline: teacher-directed lessons
- Class-wide Peer Tutoring (CWPT)
 - Students were assigned a tutoring partner and assigned to a tutoring team
 - Learner read for 8-10 minutes while peer scored points on a point sheet for correctly read sentences
 - Same material/reading series as baseline
 - Tutor provided positive and corrective feedback as the learner read
 - Passages could be read 2x during a tutoring session
 - Tutor asked 3 comprehension questions
 - Tutor roles were reciprocal
 - Teachers monitored tutoring sessions and gave students bonus points on their point sheet for appropriate tutor-learner behaviors





Class-wide Peer Tutoring
An Integration Strategy to Improve reading skills and promote peer interactions among students with autism and general education peers.

Mean Number of Words Read Correctly per Minute

Student	Baseline	CWPT1	Baseline	CWPT2
Mike	106	125	124	132
P1 ^a	61	86	75	97 ^b
P2	49	71	71	93 ^b
P3	74	77	82	85
P4	118	137	123	115
Adam	96	127	104	122
P5	36	55	43	59 ^b
P6	90	105	102	108
P7	45	85	79	96
P8	50	69	67	81 ^b
P9	113	125	115	133
Pete	117	129	107	128
P10	65	86	58	96 ^b
P11	68	81	55	— ^b
P12	126	143	144	166
P13	144	181	177	186
P14	183	161	164	177

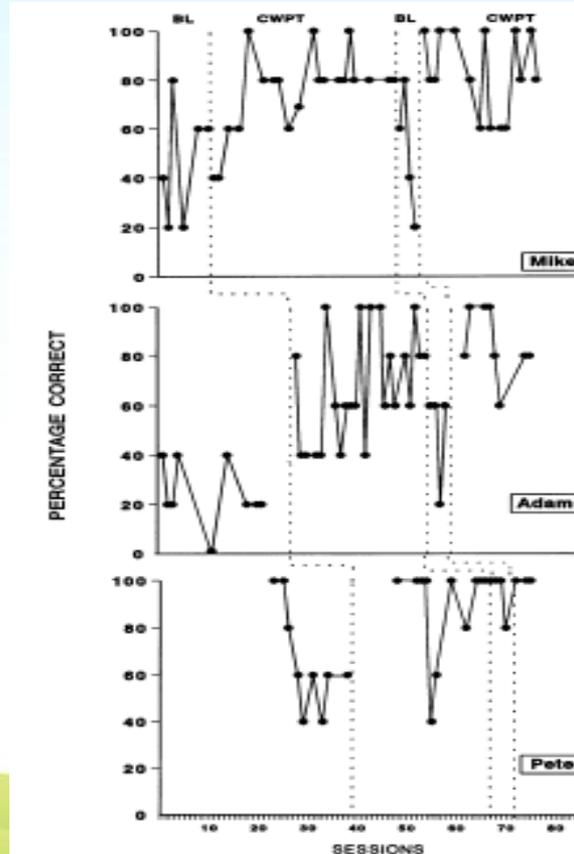
^a P = performance of regular classroom peers.

^b Peers with learning disabilities.



Class-wide Peer Tutoring

An Integration Strategy to Improve reading skills and promote peer interactions among students with autism and general education peers.



Class-wide Peer Tutoring

An Integration Strategy to Improve reading skills and promote peer interactions among students with autism and general education peers

Mean Percentage Correct on Reading Comprehension Questions

Student	Baseline	CWPT1	Baseline	CWPT2
Mike	47	76	50	83
P1 ^a	66	94	70	88 ^b
P2	68	86	93	98 ^b
P3	73	87	60	92
P4	80	93	100	90
Adam	24	68	50	83
P5	60	90	60	91 ^a
P6	83	99	87	100
P7	80	97	90	98
P8	80	91	80	100 ^b
P9	78	97	73	90
Peer	67	90	93	100
P10	82	95	100	100 ^b
P11	78	84	80	— ^a
P12	69	93	100	100
P13	66	100	90	90
P14	100	90	80	100

^a P = performance of regular classroom peers.

^b Item with learning disabilities.



Class-wide Peer Tutoring

An Integration Strategy to Improve reading skills and promote peer interactions among students with autism and general education peers

CLASSWIDE PEER TUTORING

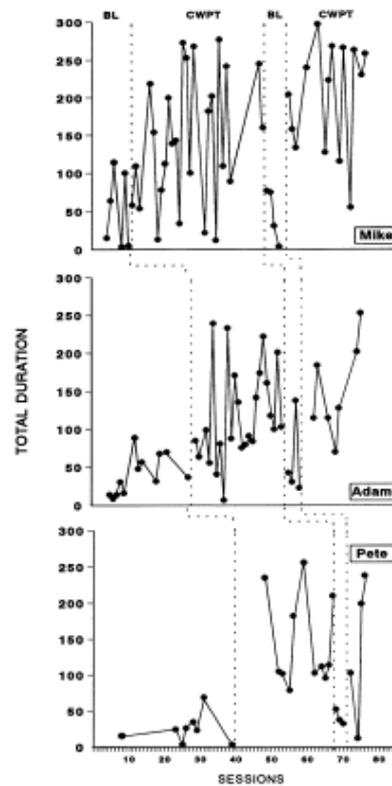
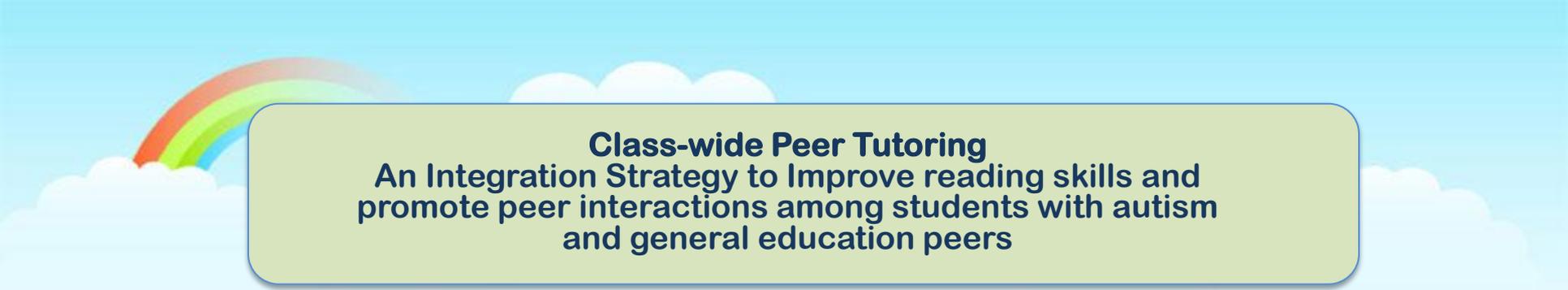


Figure 2. Total duration (seconds) of social interaction during free-play sessions following peer-tutoring sessions for the 3 target students.





Class-wide Peer Tutoring
An Integration Strategy to Improve reading skills and
promote peer interactions among students with autism
and general education peers

- Discussion
 - Class-wide Peer Tutoring was shown to be effective for increasing academic achievement and social interactions
 - Class-wide Peer Tutoring positively affected academic achievement for a majority of the students
 - Increasing reading fluency
 - Increasing accuracy with answering comprehension questions
- Mixed results were noted for error rates across conditions
- Positive finding was that class-wide peer tutoring increased the duration of social interaction during unstructured free-time activities that immediately followed peer tutoring sessions.





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“Peer intervention strategies should be used to facilitate an atmosphere of acceptance and caring to minimize the possibility of negative peer interactions” (Bellini, 2006)



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References

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