Key Points of Peer P.A.L.S. Program Research Paper

There were three objectives for our research:
1. Measure knowledge gains from training for peers and supporting adults
2. Measure change in targeted core skills for autistic children
3. Evaluate social validity among participants and stakeholders

Research spanned 2009, 2010, and 2021 and included 106 autistic children ages 3-12 in Pre-K and elementary school. We refer to autistic student participants as "student". 96 non-autistic peers referred to as "peer pals," and 52 supporting adult staff or "adults," were trained. A total of 254 participants were included in this study.

Objective 1 Measure knowledge gains from training for peers and adults

Peer P.A.L.S. Program Impact on Peer Pals and Supporting Adults

Knowledge gains from pretest and posttest scores for *peer pals* and *adult* participants are reported. The results of these tests are as follows:

2010, the *peer pals* participants took the pretest and posttest after participating in the program.
- The average pretest score for *peer pals* in 2010 was 52 out of 100 points
- The average posttest score for *peer pals* in 2010 was 88 out of 100 points

2021, a new cohort of *peer pals* took the same pretest and posttest. The results are as follows:
- The average pretest score for *peer pals* in 2021 was 57 out of 100 points
- The average posttest score for *peer pals* in 2021 was 96 out of 100 points
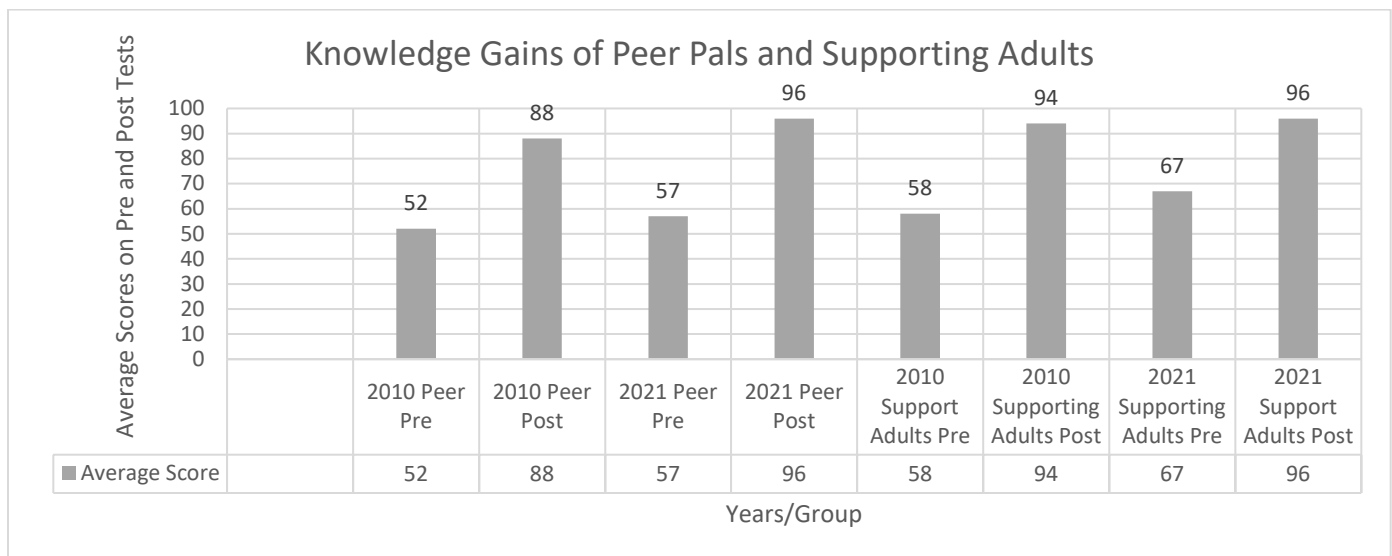
In addition to the *peer pals* training, the program also trains supporting *adult* staff who work with autistic children and help them learn and grow.

2010, *adult*s also took a pretest and posttest. The results of these tests for *adults* are as follows:
- The average pretest score for *adult* participants in 2010 was 58 out of 100 points
- The average posttest score for *adult* supporting staff in 2010 was 94 out of 100 points

2021, the *adult* staff also took another pretest and posttest to measure their progress. The results follow:
- The average pretest score for the *adult* staff in 2021 was 67 out of 100 points
- The average posttest score for the *adult* staff in 2021 was 96 out of 100 points

	2010 Peer Pre	2010 Peer Post	2021 Peer Pre	2021 Peer Post	2010 Support Adults Pre	2010 Supporting Adults Post	2021 Supporting Adults Pre	2021 Support Adults Post
Average Score	52	88	57	96	58	94	67	96

The Peer P.A.L.S. Program has consistently improved knowledge and skills over the years. Scores on the posttest have remained stable, mostly between 80 and 100%, indicating knowledge and skill improvement with the potential for further growth.

Objective 2 Measure change in targeted core skills for autistic children

The Peer P.A.L.S. Program had an impact on the skill development of autistic children. Data collected from assessments during 2009 and 2010 illustrates the program's effectiveness by comparing each student's baseline and post-program assessments.

Analysis of 2009 Pretest and Posttest 10-Skill Assessment of Autistic Students
- The mean scores for all skill types increased significantly from pretest to posttest
- 100% increase in "play using a variety of toys - skill 1"
- 103% increase in "reciprocal play - skill 2."
- The median scores also increased for all skill types, with a 100% change in "waits & take turns - skill 3"
- Skill 9, "greets or initiates," demonstrated the most significant increase, with a 129% improvement
- Overall, the average increase across all skills was 81.1%.

2009 Percentage change from pre-test to post-test 10-skill Assessment of Autistic Students

Skill Type	Pre-Test Total Score	Post-Test Total Score	% Change
PLAY USING A VARIETY TOYS - Skill 1	24	48	100%
RECIPROCAL PLAY - Skill 2	30	61	103%
WAITS & TAKE TURNS - Skill 3	39	71	82%
SELF-MANAGEMENT - Skill 4	32	52	63%
ATTENDS TO LESSON - Skill 5	31	57	84%
FOLLOWS DIRECTION - Skill 6	33	58	76%
MOTIVATION PARTICIPATE - Skill 7	29	43	48%
IMITATES PEER - Skill 8	27	43	59%
GREETS OR INITIATES - Skill 9	28	64	129%
APPROPRIATE LANGUAGE - Skill 10	36	60	67%

Note. The Table above shows the total score for each skill in the 2009 school year. The

percentage change represents the improvement from the pre to post test.

Analysis of 2010 Pretest and Post-Student Skill Assessments
- All skills improved from the pretest to the posttest
- Seven of the ten skills showed significant improvements, with the most significant percentage changes seen in reciprocal play, self-management, follows direction, motivation to participate, greets or initiates, and appropriate language, all showing more than a 100% increase in scores
- Percentage change for the skill "reciprocal play - skill 2" increased by 126% from the pretest to the posttest, indicating that the *peer pals* and *adult* supporting staff significantly improved ability to engage in reciprocal play with autistic *students* during the program
- Percentage change for the skill "self-management - skill 4" increased by 133% from the pretest to the posttest, indicating that the *peer pals* and *adult*s made significant progress in their ability to support autistic children in self-management.

2010 Percentage change from pre-test to post-test 10-skill Assessment of Autistic Students

Skill Type	Pre-Test Total Score	Post-Test Total Score	% Change
Play Using a Variety Toys – Skill 1	24	44	83%
Reciprocal Play – Skill 2	34	77	126%
Waits & Take Turns – Skill 3	21	41	95%
Self-Management – Skill 4	27	63	133%
Attends To Lesson – Skill 5	48	74	54%
Follows Direction – Skill 6	18	42	133%
Motivation Participate – Skill 7	21	52	148%
Imitates Peer – Skill 8	17	34	100%
Greets Or Initiates – Skill 9	40	95	138%
Appropriate Language – Skill 10	15	39	160%

Note. The Table above shows the total score for each skill in the 2010 school year. The

percentage change represents the improvement from the pre to posttest.

Objective 3 Evaluate social validity (surveys) among participants and stakeholders

Results: Description of Social Validity

     Social validity is the social significance of goals in treatment, the acceptability of procedures, and the social importance of effects (Wolf, 1978). A collection of exit surveys from *students*, *peer pals*, *adult* staff, and parents were analyzed and shown below.

Social Validity Results

Year of Study	2009	2010	2021
Students	93	87	93
Peers	92	92	93
Adults	93	95	94
Parents	89		95
Avg. Agreement	**92**	**91**	94

Note. The Table shows the average ratings on exit surveys of the Peer P.A.L.S. Program by

social validity groups (Students in Pre-K, K-2, and 3-5 and peers and adults) in 2009, 2010, and

2021. The average score from the group is reported on a scale of 0 to 100, with higher scores

indicating higher levels of social validity. Average scores from participant groups range from 87

to 96. All participant groups averaged 91-95 percent in agreement with the survey questions.

The results suggest the social significance and acceptability of the procedures and outcomes of the program. The program has social significance in that it increases opportunities to engage in meaningful social and life skills. Evaluation of the program's acceptability showed consistently high levels of agreement with all participant groups averaging 91 - 95 percent in agreement with the program procedures and goals.

Implementation fidelity and interrater reliability

The study assessed the Peer P.A.L.S. Program's implementation fidelity and interrater reliability to ensure consistency and integrity. Implementation fidelity refers to how well the program was delivered as intended, and interrater reliability refers to an agreement between the observer's ratings of the same behavior. The data on the program's implementation fidelity and interrater reliability is presented below.

Year of Study	2009	2010	2021	Average
Implementation Fidelity	89	93	95	92.333
Interrater Reliability	90	90	95	91.667

Implementation of Fidelity and Interrater Reliability Results for the Peer P.A.L.S. Program

Note. Implementation Fidelity – This measure reflects the extent to which the program was

implemented as intended. Interrater Reliability – This measure reflects the consistency in ratings

between different observers. A high score indicates good agreement between observers.

Overall, the fidelity of implementation and interrater reliability scores were high across all years, with an average of 92% for implementation and 91% for interrater reliability. These results suggest that the program was consistently delivered and accurately measured.