

TeachTown Basics
Compared to Traditional Instruction on
Letter Recognition
for Preschoolers with Special Needs

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Study Details

Background

The inclusion of young children with disabilities in early childhood settings presents significant challenges in meeting the needs of all learners.

The standard practice in early childhood classrooms is to provide developmentally appropriate instructional practices which may not be appropriate for students with disabilities.

Computer-assisted technology is a viable option to augment instruction for students with disabilities.

Goal

Compare the effects of *TeachTown Basics* with traditional teaching practices on the rate of alphabet letter acquisition for children with disabilities.

Study Details

Setting

Inclusive preschool classroom in a small urban district's elementary school that received Title I funds in the Southeastern United States. The study took place before and after lunch during "free choice centers."

**Student
Participants**

Six children ages 3 to 5 years.

Three multi-racial and three White.

Five students were classified with developmental delay and one had a referral for a special education evaluation.

**Teacher
Participant**

One teacher with dual certification in early childhood and early childhood special education and three years experience working with preschoolers.

Study Details

The study used an alternating treatment single case design combined with a pretest-posttest comparison to compare the rate of acquisition of letter knowledge between *TeachTown Basics* and traditional teaching practices.

The alternating treatment design had three phases:

- **Baseline:** student assessment on target letters without instruction in either intervention.
- **Intervention:** student assessment on target letters during instruction with *TeachTown Basics* and traditional teaching activities.
- **Maintenance:** student assessment on a set of letters not previously taught with the intervention deemed most effective.

Study Design

Intervention Phase

TeachTown Basics (Basics) and Traditional Teaching Activities (TTA)
10 Minutes a Day Each Over 10 Days

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Before Lunch	<i>Basics</i>	<i>Basics</i>	TTA	TTA	<i>Basics</i>	<i>Basics</i>	TTA	<i>Basics</i>	TTA	TTA
After Lunch	TTA	TTA	<i>Basics</i>	<i>Basics</i>	TTA	TTA	<i>Basics</i>	TTA	<i>Basics</i>	<i>Basics</i>

Each treatment targeted a different set of 5 uppercase alphabet letters.

Each day, an examiner assessed all 10 target letters off the computer.

Participants used *TeachTown Basics* to learn 5 targeted alphabet letters and traditional teaching practices to learn a different set of 5 letters. (Every day for 10 days they did both.)

TeachTown Basics

- 10 minutes a day
- iPads set up at tables in the back of the room
- Reward videos/games every 3 to 5 trials
- No off-computer generalization lessons.

Instruction via Traditional Teaching

- 10 minutes a day
- The *Creative Curriculum*
- Children selected one activity out of several choices during free choice center time:
- Letter manipulatives, letter matching, letter puzzles, tracing letter activities
- Teacher guided learning based on the student's interests.
- Students were not required to remain at tables with materials if they chose not to do so.

Maintenance Phase

During maintenance (after the intervention phase), the treatment determined to be most effective during the intervention phase – *TeachTown Basics* – was used.

Traditional teaching was discontinued and *TeachTown Basics* targeted a set of 5 uppercase letters not previously used for an additional 6 days.

	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16
At Least 10 Minutes a Day	<i>Basics</i>	<i>Basics</i>	<i>Basics</i>	<i>Basics</i>	<i>Basics</i>	<i>Basics</i>

1st Measure: Alternating Treatment Percent of Correct Letters Identified

- 1 out of 6 students (Cameron) demonstrated an increase in letter recognition accuracy with *TeachTown Basics*.
- None of the participants showed an increase in letter accuracy via traditional teaching.

Over 10 days with *TeachTown Basics*, Cameron showed an increase in percent letters identified correct, but with traditional teaching no change was observed.

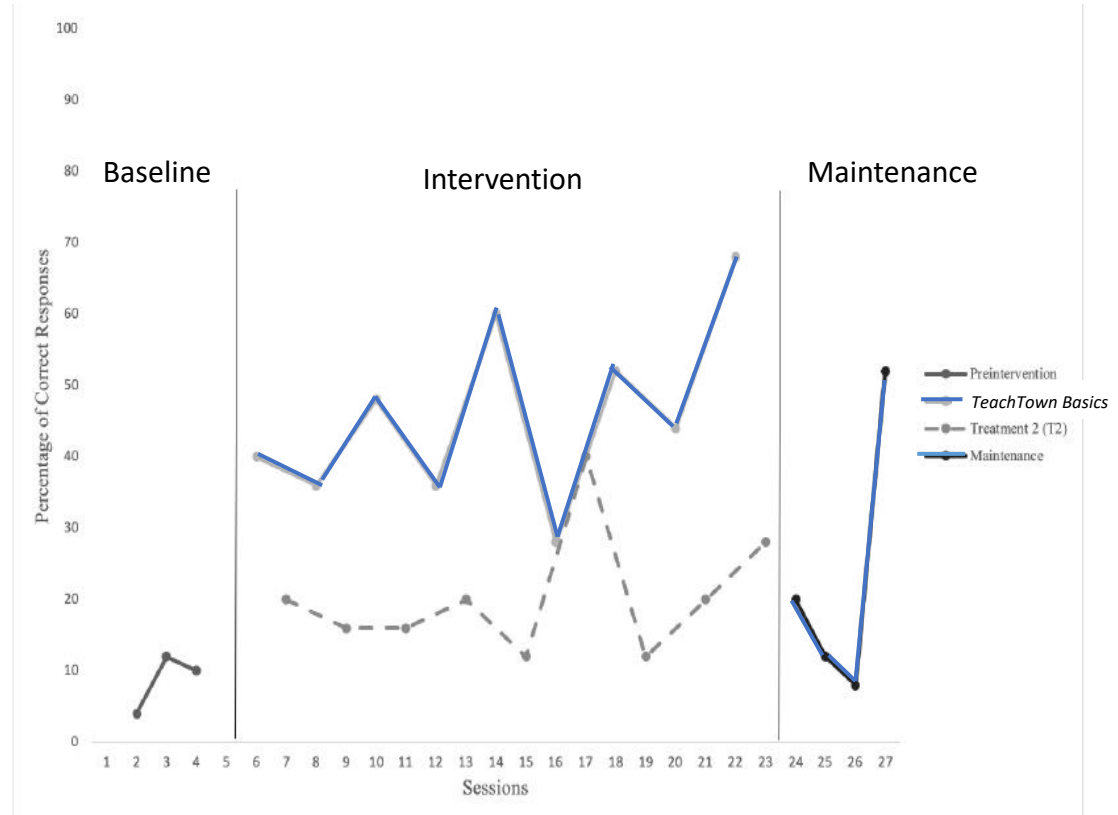


Figure 1. Mean average of correct responses for Cameron.

Note. Pseudonyms are used for all participants.

2nd Measure: Pre-/Posttest PALS Alphabet Knowledge

- 4 out of 6 students demonstrated an increase in letter recognition with *TeachTown Basics*.
- None of the students showed an increase in letters acquired end of year that were targeted via traditional teaching. **Traditional teaching methods did not produce any gains in letter acquisition.**

All of the letters acquired were targeted by *TeachTown Basics*.

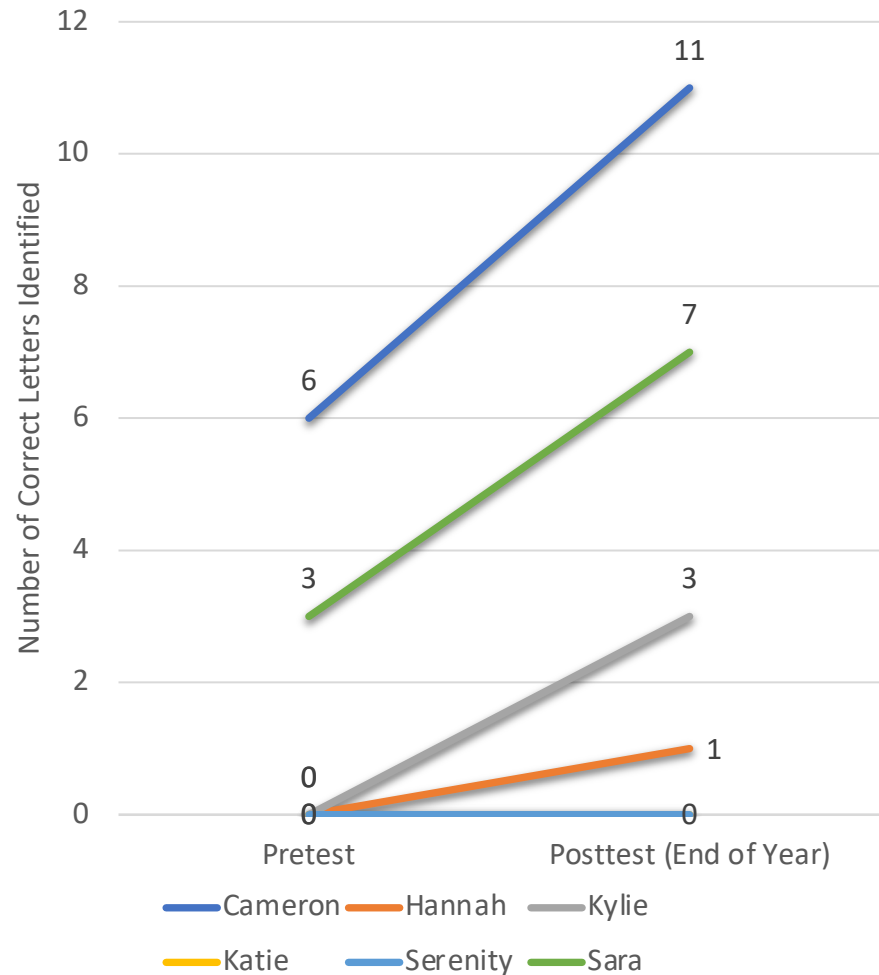


Figure 2. Phonological Awareness Literacy Screening (PALS) Alphabet Knowledge task scores for uppercase letters.

Note. Pseudonyms are used for all participants.

3rd Measure: Percent of Total Time Students Engaged With Traditional Teaching

- Percent of total time engaged with traditional instruction was 30% or less for three participants, 60% for two, and 80% of the time for one participant.
- Total mean usage time was 2.3 hours for *TeachTown Basics* and 1.7 hours for traditional instruction.

Few participants demonstrated interest in traditional teaching activities.

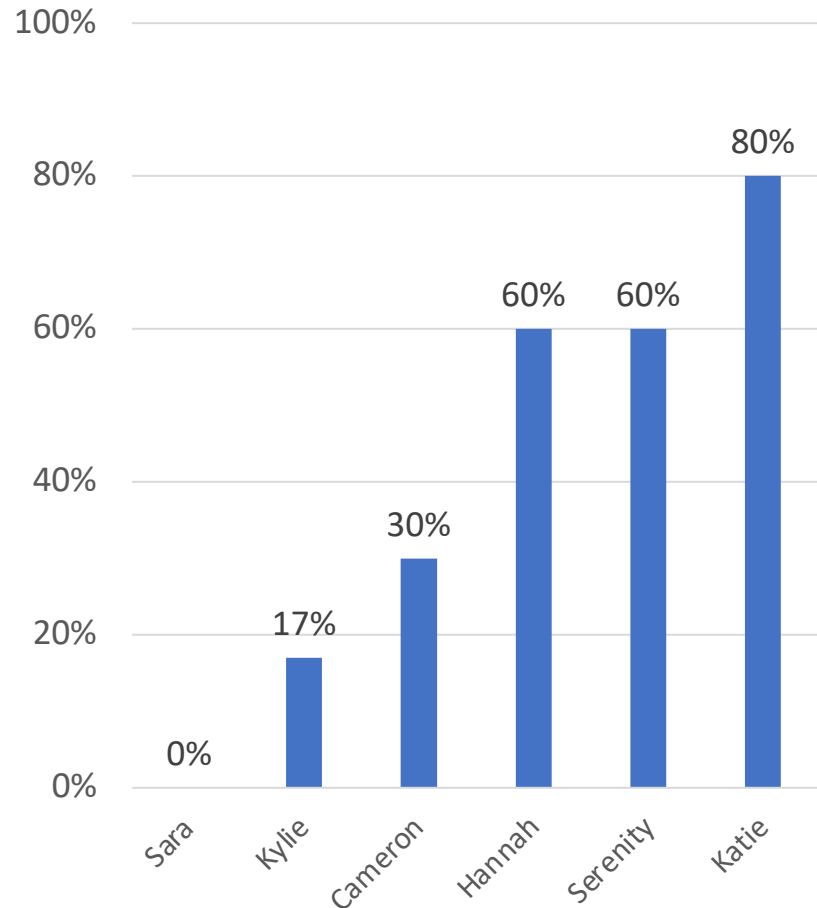


Figure 3. Percent of total center time students engaged with traditional teaching activities.

Note. Pseudonyms are used for all participants.

Social Validity Results

The teacher and her instructional assistant reported:

- *TeachTown Basics* was appropriate for teaching letter recognition to target students.
- They would be interested in using *TeachTown Basics* to focus on other skills.
- They would recommend *TeachTown Basics* to other early childhood teachers and for other students with disabilities.

Study Findings and Conclusions

During 10 days of instruction, one of the six participants showed an increase in target letter acquisition with *TeachTown Basics* while none of the participants showed an increase with traditional instruction.

At the end of the school year, four of the six participants showed an increase in letters targeted by *TeachTown Basics* while none of the students showed an increase in letters targeted by traditional instruction on PALS Alphabet Knowledge.

Traditional teaching did not produce any improvements in letter acquisition, but few of the participants demonstrated interest in the traditional teaching activities.

The results show that *TeachTown Basics* is promising for effectively teaching letter identification to preschool-aged students with disabilities.