

# 2,013

During 2011-2013  
students were evaluated on  
*TeachTown: Basics*

# 355

School districts were  
involved in the evaluation

# 41

States and 4 provinces  
across the U.S. and  
Canada participated

# 8,991

Students with disabilities  
or at-risk were tested

# 7

Out of 10 students with ASD  
& non-ASD showed growth  
with *TeachTown: Basics*

**TEACHTOWN, INC.**

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# EVIDENCE OF EFFECTIVENESS

TEACHTOWN IS HIGHLY COMMITTED TO ACTIVELY PARTICIPATE IN HIGH-QUALITY RESEARCH ON ITS PROGRAMS THAT ADDRESS NOT ONLY THE QUESTION OF WHAT WORKS, BUT ALSO THE QUESTION OF FOR WHOM IS IT EFFECTIVE, AND WHAT FACTORS MODERATE PROGRAM EFFECTIVENESS

## RESEARCH GUIDE

“TeachTown® provides a more meaningful experience for children in the classroom.”

*Monica Yaeger, Teacher*

“Parents and educators can access the student’s progress anytime!”

*Renee Miner, Teacher*

“My student was using the program at home and his mother was absolutely thrilled. We saw so much progress with him in his academics, but also in his behavior. He likes to work. He was excited, he was happy. Once I saw that, I know I needed this with all of my students. He was benefitting so much, I wanted to see everybody else benefit. I was able then to start using the program with all of my students. I saw varying degrees of success, but success with everybody.”

*Kate Reinke, Teacher*

“Behavior problems decrease because the students are totally engaged!”

*Tracy Dodd, Special Education  
Itinerant Teacher*

“TeachTown® saves teachers a lot of time in the sense that data recording is a very big part of any special educator’s job. And TeachTown automatically does that for us.”

*Kathy Mason, Teacher*



**TEACHTOWN®**

Exceptional Solutions for Exceptional Students

# EFFECTIVENESS

Stakeholders have a vested interest in knowing that the educational programs proposed to impact the lives of children with autism and special needs are based, as far as possible, on evidence, so that the resources available to fund these programs are used in the most efficient and effective way possible. Surprisingly, there is little known about the impact of any curricula on the outcomes of students with special needs. Evaluation studies drawing on multiple methodologies and meeting scientific standards can provide that information.

TeachTown® is committed to actively participate in high-quality research on its programs that address not only the question of what works, but also the question for whom it is effective, as well as what factors moderate program effectiveness.

The following pages begin with a list of evidence-based practices identified by the National Professional Development Center (NPDC) on ASD (Wong et al., 2013) and the National Standards Project (National Autism Center, 2009) and their alignment to TeachTown programs. Then a sample of studies of actual TeachTown customers and the educationally meaningful gains students using *TeachTown®: Basics* were able to achieve are presented.

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## Blue Ribbon Findings on Evidence-Based Practices

The National Autism Center's National Standards Project and the National Professional Development Center (NPDC) on Autism Spectrum Disorder (ASD) almost entirely agree on which educational interventions are effective for children with ASD (National Autism Center, 2009; Wong et al., 2013). They used a stringent review process that incorporated clear criteria for evaluating evidence from over two decades of research. Of the 27 evidence-based practices identified by the NPDC, 26 were identified by the National Standards Project as established or emerging practices. Educational practitioners can access 12 of the 27 evidence-based practices in *TeachTown: Basics* and *TeachTown: Social Skills*. **Figure 1** shows the overlap between evidence-based practices identified by the NPDC and the National Standards Project and their alignment to TeachTown programs. The NPDC has provided step-by-step guides for implementing each practice. TeachTown has used these guidelines to rate the extent to which each practice is visible in our programs.

An important point from the NPDC and National Standards Project analyses of intervention research is that almost all of the interventions listed as evidence-based are based on Applied Behavior Analysis (ABA). While the NPDC and the National Standards Project agree that effective instruction for children with ASD consists of ABA-based interventions, this consensus is not sufficient to facilitate the use of evidence-based practices in schools (Kasari & Smith, 2013; Strain, Schwartz & Barton, 2011). One barrier is the intensive nature of ABA-based interventions, which relies heavily on one-to-one intervention. Another barrier is that virtually all proven-efficacious, ABA-based interventions lack a curriculum that addresses a broad range of student needs, with clear lesson plans and program materials for group work (Dingfelder & Mandell, 2011). Further they often do not include an educational practitioner-friendly method for data collection to monitor fidelity and student progress or programming for generalization of skills. *TeachTown: Basics* and *TeachTown: Social Skills* address these obstacles by providing practitioners with fully manualized, ABA-based, technology-assisted interventions paired with specific curriculum content, clear lesson plans for generalization, and comprehensive automated data collection and reporting systems.

### Conclusion

The NPDC and the National Standards Project have conducted the most recent and systematic review of intervention research. They have identified the key components of interventions that are essential to improving student outcomes. Many of these aspects are integral to *TeachTown: Basics* and *TeachTown: Social Skills*. The NPDC has also made important progress toward defining these evidence-based practices by providing step-by-step directions for implementing the practices. TeachTown is committed to using these guidelines along with input from practitioners to refine our programs over time.

**Figure 1. Evidence-based practices from the NPDC and NSP and their visibility in TeachTown programs**  
 (Adapted from Hume & Odom, 2011).

Overlap Between Evidence Based Practices Identified by the National Professional Development Center (NPDC) on ASD and the National Standards Project (NSP)

Evidence-Based Practice Identified by the National Professional Development Center (NPDC) on ASD	Established Treatments Identified by the National Standards Project (NSP)										Comprehensive Behavioral Treatment for Young Children	Joint Attention Intervention	
	Antecedent Package	Behavioral Package	Story-based Intervention Package	Modeling	Naturalistic Teaching Strategies	Peer Training Package	Pivotal Response Treatment	Schedules	Self-Management				
Prompting	X												
Antecedent-Based Intervention	X												
Time delay	X												
Reinforcement		X											
Task Analysis		X											
Discrete Trial Training		X											
Functional Behavior Analysis		X											
Functional Communication Training		X											
Response Interruption/Redirection		X											
Differential Reinforcement													
Social Narrative			X										
Modeling				X									
Video Modeling				X									
Naturalistic Interventions					X								
Peer Mediated Intervention						X							
Pivotal Response Training							X						
Visual Supports								X					
Structured Work Systems									X				
Self-Management										X			
Parent Implemented Intervention	The NSP did not consider parent-implemented intervention as a category of evidence-based practice.												
Social Skills Training Groups	Social Skills Training Groups was identified as an emerging practice by the NSP												
Speech Generating Devices	Speech Generating Devices was identified as an emerging practice by the NSP												
Computer-Aided Instruction	Computer Aided Instruction was identified as an emerging practice by the NSP												
Scripting	Scripting was identified as an emerging practice by the NSP												
Picture Exchange Communication	Picture Exchange Communication System was identified as an emerging practice by the NSP												
Cognitive Behavioral Intervention	Cognitive Behavioral Intervention was identified as an emerging practice by the NSP												
Exercise	Exercise was identified as an emerging practice by the NSP												
Extinction	Extinction was identified as an emerging practice by the NSP												
Legend													
X	Evidence-based practice identified by both the National Standards Project (NSP) and the National Professional Development Center (NPDC) on ASD.												
X	Evidence-based practice as described by research articles in the evidence base is visible in TeachTown: Basics and/or TeachTown: Social Skills												
X	Evidence-based practice as described by the research articles in the evidence base is partially visible in TeachTown: Basics and/or TeachTown: Social Skills												

Hume, K. A., & Odom, S. L. (2011). Best practices, policy, and future directions: Behavioral and psychosocial interventions. In D. Amaral, G. Dawson, & D. Geschwind (Eds.), *Autism spectrum disorders* (pp. 1295-1308). New York, NY: Oxford University Press.

## Los Angeles Unified School District, California

A study of the *TeachTown: Basics* curriculum was carried out in four elementary schools in Los Angeles Unified School District (LAUSD) during the 2009-2010 school year (Whalen et al., 2010). The participants were 47 students ages 3 to 6 years enrolled in the district's preschool and K-1 Intensive Comprehensive Autism Programs, a special day class program for students with an eligibility of autism spectrum disorder (ASD). The students were enrolled in four preschool and four K-1 classrooms with no more than eight students in a class. The eight classrooms were randomly assigned to a *TeachTown: Basics* treatment or to a no-*TeachTown: Basics* comparison group. Over a three month period, students in the treatment group used the *TeachTown: Basics* computer-based lessons for approximately twenty minutes a day in the classroom. In most cases, the child's regularly scheduled 1:1 direct teaching time was replaced with *TeachTown: Basics* computer time. The study assessed children's growth in basic skill areas including social skills, receptive and expressive language, auditory memory, general concepts, matching, and body parts using the Brigance Inventory of Early Development (IED; Brigance, 2004), a criterion-referenced assessment.

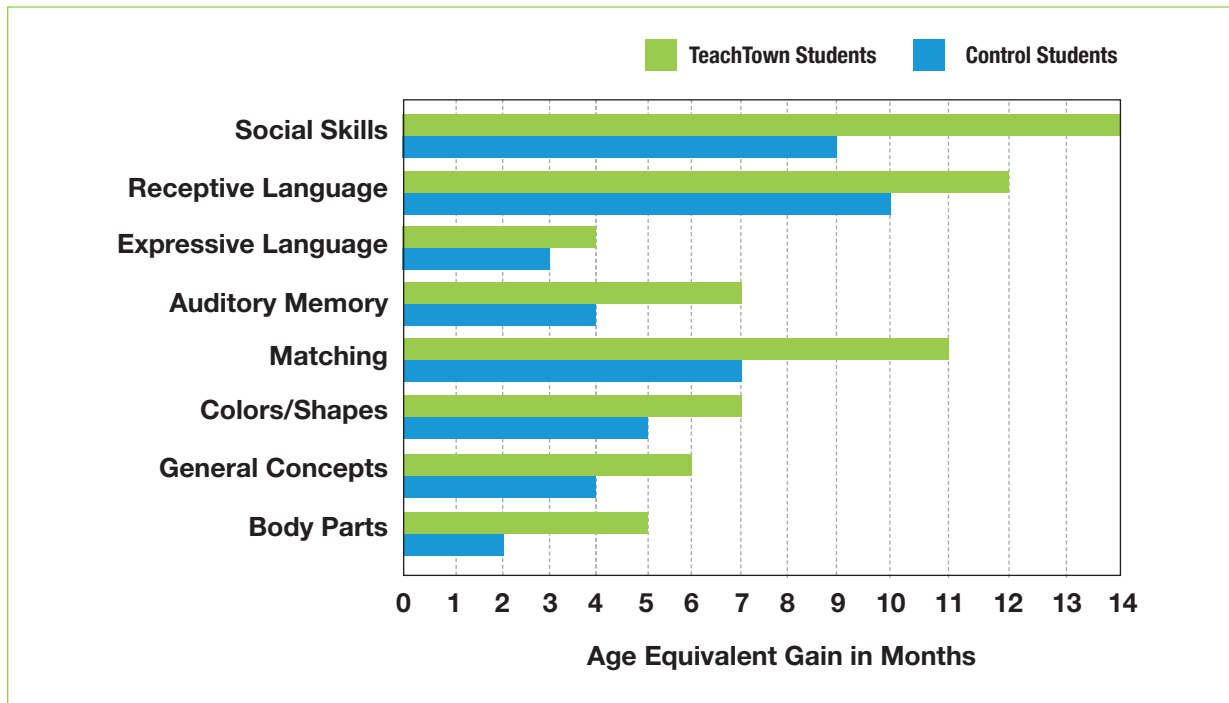
### Results

At pretest, the treatment and comparison groups were similar in terms of chronological age and severity of autism symptoms, as measured by the Childhood Autism Rating Scale (CARS, Schopler et al., 1986). After only three months of instruction, students who used *TeachTown: Basics* (n = 22) showed larger age-equivalent gains on the Brigance IED than students who did not use the program (n = 25) in all eight of the skill areas assessed. Gains for *TeachTown: Basics* students were between two and five months greater than the gains of students in the comparison group (see Figure 1).

Most of the treatment students (15 out of 22) mastered lessons in *TeachTown: Basics*, with an average of 4-5 computer-based lessons mastered over the three month period; representing a minimum of 16-20 concepts learned. The study found a significant positive relationship between the number of lessons mastered and pre-/posttest change on the overall Brigance score: children who mastered more *TeachTown: Basics* computer-based lessons showed larger increases in Brigance scores after three months of instruction.

The research was funded through a Technology in the Works grant from the National Center for Technology Innovation (NCTI), and was published in *Autism—The International Journal of Research and Practice*, a peer-reviewed journal.

Figure 1. Age equivalent gains in months on the Brigance® IED over three months of instruction.



**Conclusion**

In a large urban district, students with autism who used *TeachTown: Basics* twenty minutes a day in the classroom for 3 months were compared to a comparison group of students with autism in the same LAUSD intensive autism educational program. Although the students were similar at baseline, students who used *TeachTown: Basics* showed greater developmental gains in all skill areas assessed, as measured by the Brigance IED, than students who did not use the program. After 3 months of instruction, *TeachTown: Basics* students had an average gain ranging from 4 to 14 months across language, academic and cognitive, and social skill areas.



## Killeen Independent School District, Texas

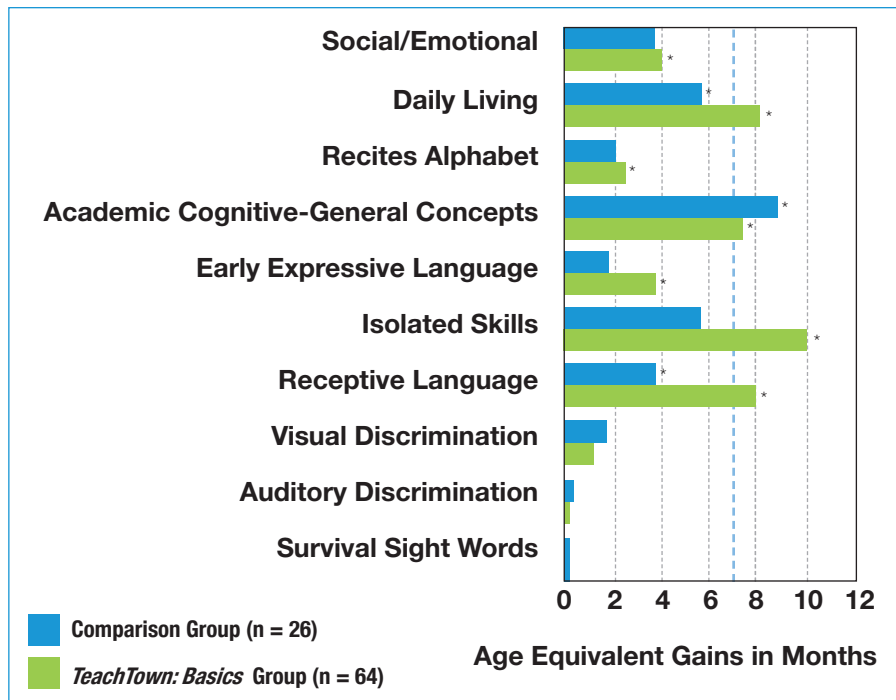
During the 2009-2010 school year, children with disabilities in preschool and pre-kindergarten received instruction in *TeachTown: Basics* with 14 teachers in eight schools in Killeen Independent School District (ISD). Killeen ISD is a racially and ethnically diverse school district serving approximately 41,000 students in a metropolitan area in central Texas. Over 65 languages are spoken in the district's schools. This evaluation examines growth in receptive-expressive language, cognitive-academic, social-emotional and adaptive behavior skill areas for 64 students who received *TeachTown: Basics* instruction and 26 students who did not use *TeachTown: Basics*. Growth in basic skill areas was measured by the Brigance Inventory of Early Development (IED; Brigance, 2004). Of the 90 student participants, all qualified for special education services, 24 percent were classified as African American, 24 percent as Latino, 6 percent as Asian/Pacific Islander, 45 percent White, and 1 percent American Indian/Alaskan Native.

The district assigned *TeachTown: Basics* to classrooms in the district's Preschool Program for Children with Disabilities (PPCD) that had students with the greatest need based on teacher recommendation and Brigance IED scores. The students in PPCD classrooms without *TeachTown: Basics* formed the comparison group. PPCD classrooms incorporate 1:1 Applied Behavior Analysis (ABA) instructional sessions. In the *TeachTown: Basics* classrooms, to accommodate the computer program into the regular school day, children's regularly scheduled 1:1 direct ABA teaching time was replaced with *TeachTown: Basics* computer time.

### Results

Students spent a range of 1 to 63 hours on the *TeachTown: Basics* software with an average of 23 hours over 92 sessions during the seven month study period. After seven months of instruction in preschool and preK, students who used *TeachTown: Basics* showed statistically significant gains in 7 out of 10 skill areas measured while the comparison group showed significant gains in 3 out of the 10 areas, even though the comparison group had higher Brigance scores at baseline in nearly all skill areas (see Figure 1).

**Figure 1. Age equivalent gains on the Brigance Inventory of Early Development (IED) after seven months of instruction.**



Note. Dotted line represents the length of the study.

Note. \*p < .001

**Figure 2. Mean Brigance IED subdomain scores at pretest and posttest for the *TeachTown: Basics* and comparison groups.**

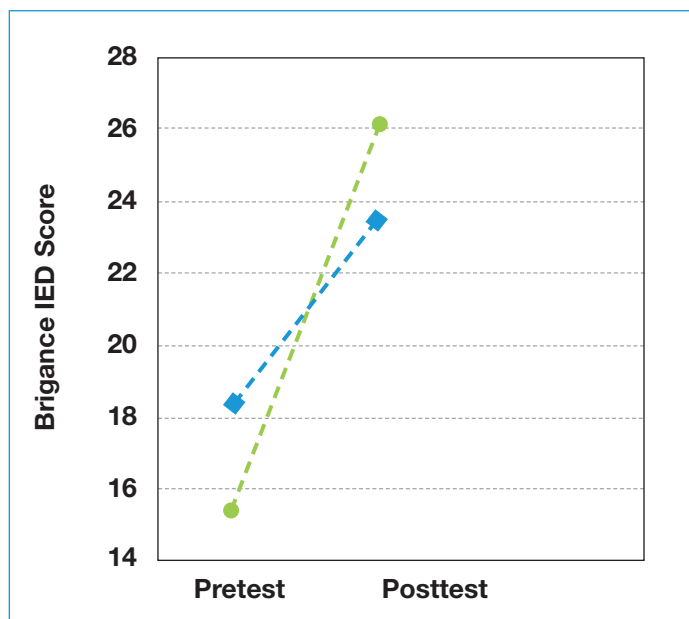
Students using *TeachTown: Basics* caught up to their higher functioning peers on the Brigance IED daily living skills subdomain and surpassed their peers on the expressive language-isolated skill subdomain (see Figure 2).

There was a significant positive relationship between how many lessons a student mastered and growth on the Brigance IED. Children who mastered more lessons on *TeachTown: Basics* tended to show larger overall gains on the Brigance.

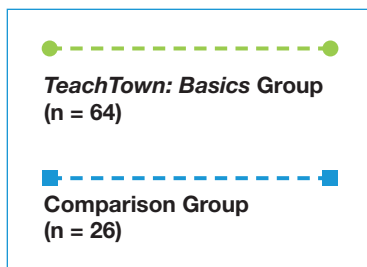
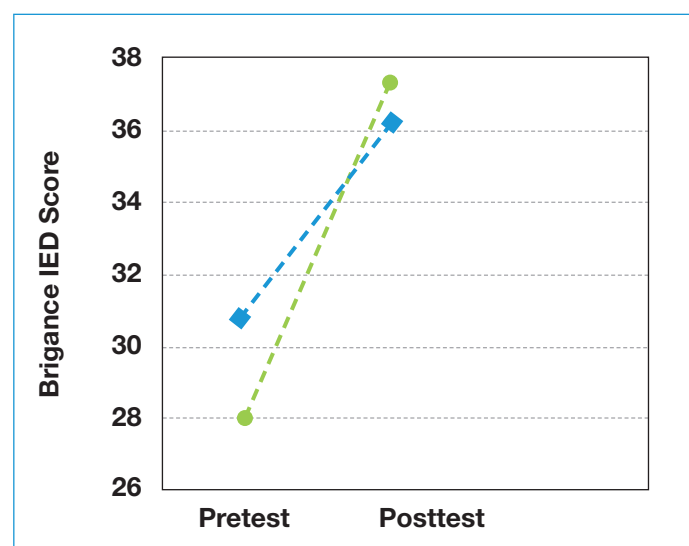
Students with non-ASD disabilities showed the same amount of growth in 9 out of 10 tested Brigance domains as students with an ASD diagnosis, supporting that *TeachTown: Basics* benefits students with disabilities other than ASD. Students with non-ASD disabilities included those with primary diagnoses of speech impairment, Down Syndrome, intellectual disability and other special needs.

The results of a social validity survey revealed that nearly all the teacher participants were in favor of *TeachTown: Basics*, would recommend it to a colleague, and believed the program is likely to result in long-term improvement in their students.

**Expressive Language-Isolated Skills**



**Daily Living Skills**



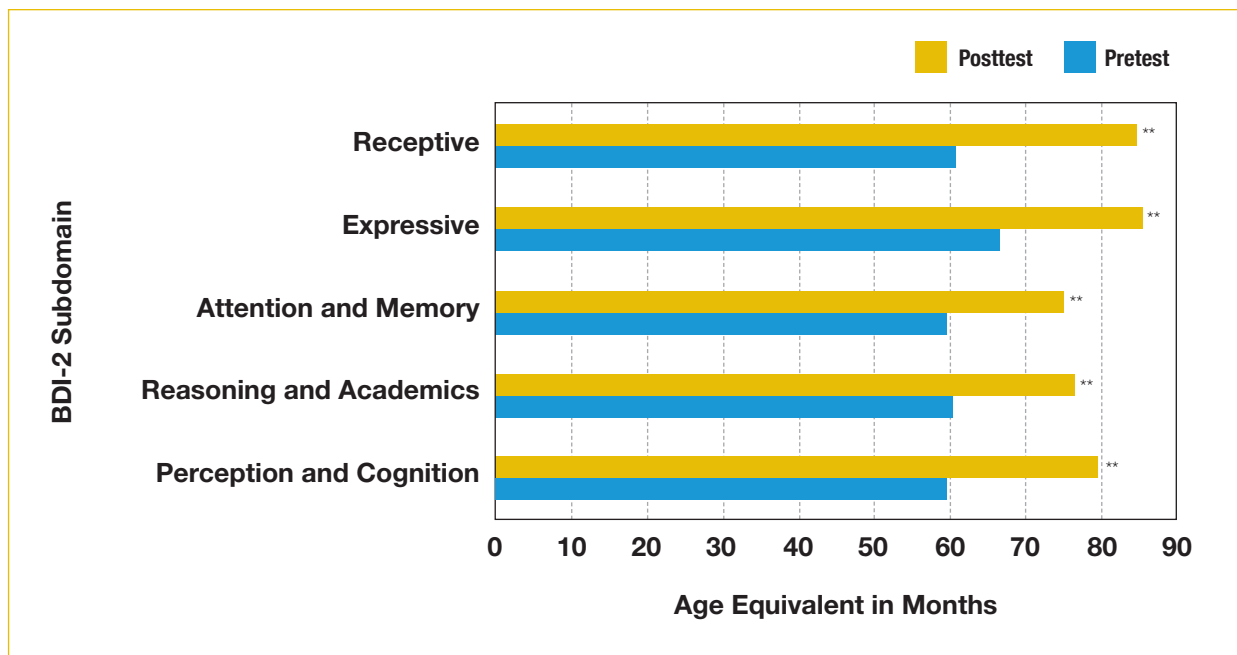
## Anson County School District, North Carolina

The current evaluation examines the impact of *TeachTown: Basics* at six elementary schools in Anson County School District, a racially diverse district located in North Carolina during the 2009-2010 school year. The students were 158 kindergarten students from low-income families identified as at-risk for school failure. Teachers were asked to implement daily *TeachTown: Basics* computer-based lessons and naturalistic, off-computer generalization lessons. The evaluation assesses the progress of the students in communication and cognitive abilities after nine months of instruction. Growth in communication and cognitive abilities were measured by the Battelle Developmental Inventory (BDI-2; Newberg, 2005), a standardized assessment of key developmental skills in young children that involves observations of the child, parent and/or caregiver interviews, and interactions with the child using toys, games and tasks.

### Results

After nine months of *TeachTown: Basics* use, students showed statistically significant and educationally meaningful gains in all communication (expressive and receptive) and cognitive (attention and memory, reasoning and academics, and perception and concepts) skill areas assessed. Age equivalent gains were 23 months in receptive communication, 18 months in expressive communication, 15 months in attention and memory, 17 months in reasoning and academics, and nearly 21 months in perception and cognition (see Figure 1). Gains averaged 1-6, or 19 months after 9 months of instruction, demonstrating accelerated growth for the at-risk kindergarten students.

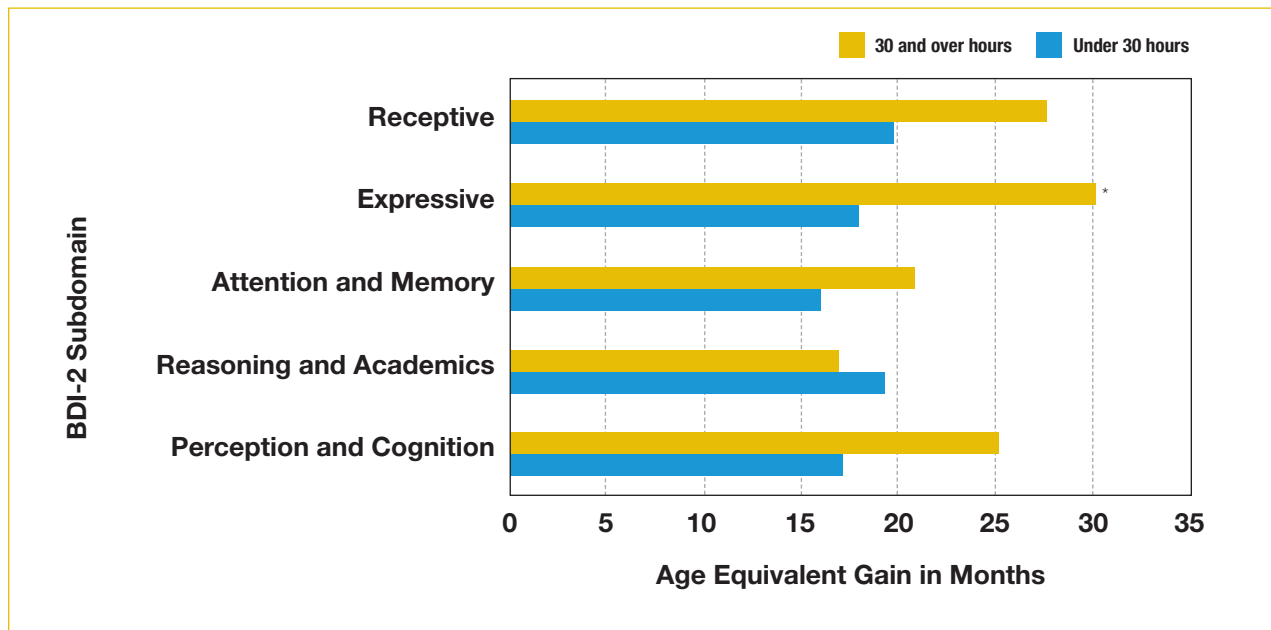
**Figure 1. Battelle Developmental Inventory-2 (BDI-2) age equivalents before and after nine months of *TeachTown: Basics* use for 158 at-risk kindergarten students.**



Note. \*\*p < .001

Increased time spent using *TeachTown: Basics* computer-based lessons was associated with higher scores on the BDI-2. Students who, on average, used *TeachTown: Basics* computer-based lessons for at least 10 minutes a day (or 30 hours per academic year) showed greater age equivalent gains than students who used the program for less than 10 minutes a day on four out of five subdomains on the BDI-2 (see Figure 2). Results were statistically significant in the Expressive Communication subdomain only. Further, there was a moderate positive relationship between the amount of time spent using *TeachTown: Basics* and scores on the Receptive subdomain of the BDI-2 ( $r(41) = 0.35, p < .05$ ).

**Figure 2. BDI-2 age equivalent gains for students who used *TeachTown: Basics* for more than 30 hours and for students who used the program for 30 hours or less during the academic year (n = 42).**



Note. \*p < .05

### Conclusion

Students who used *TeachTown: Basics* over nine months showed statistically significant and educationally meaningful gains in all subdomains of the BDI-2. However, students who spent more time using the software had higher scores than students who spent less time using the software.

## Madison School District, Arizona

During the 2012–13 school year, an evaluation examined reading and math skills during the implementation of *TeachTown: Basics* and *TeachTown: Social Skills* at a high poverty, largely Hispanic elementary school in Madison School District #38, an urban district located in Phoenix, Arizona. The evaluation assessed the achievement of students classified as having autism spectrum disorder (ASD) who were enrolled in a self-contained autism program in first and second grades. Over three months, students used *TeachTown: Basics* computer-based lessons in two 15-minute sessions a day and received small group instruction in the program's staff-led generalization lessons and Social Skills lessons in four 30-45 minutes sessions a week. Growth in academic skills were measured by the Measures of Academic Progress (MAP) for Primary Grades (Northwest Evaluation Association, 2009) in reading and mathematics—assessments that are aligned with state and national curricula and standards.

### Growth in Reading and Math

From spring 2012 to winter 2012, all students showed positive and educationally meaningful gains in reading and math as measured by the MAP during the use of *TeachTown: Basics*. Average growth for students using *TeachTown: Basics* was translated to a national percentile rank to express their growth compared to similar students across the nation. Gains shown by all *TeachTown: Basics* students exceeded growth estimates for similar students in the normative sample. Average growth for TeachTown students was at the 73rd percentile in reading and at the 66th percentile in math (see Figure 1).<sup>1</sup>

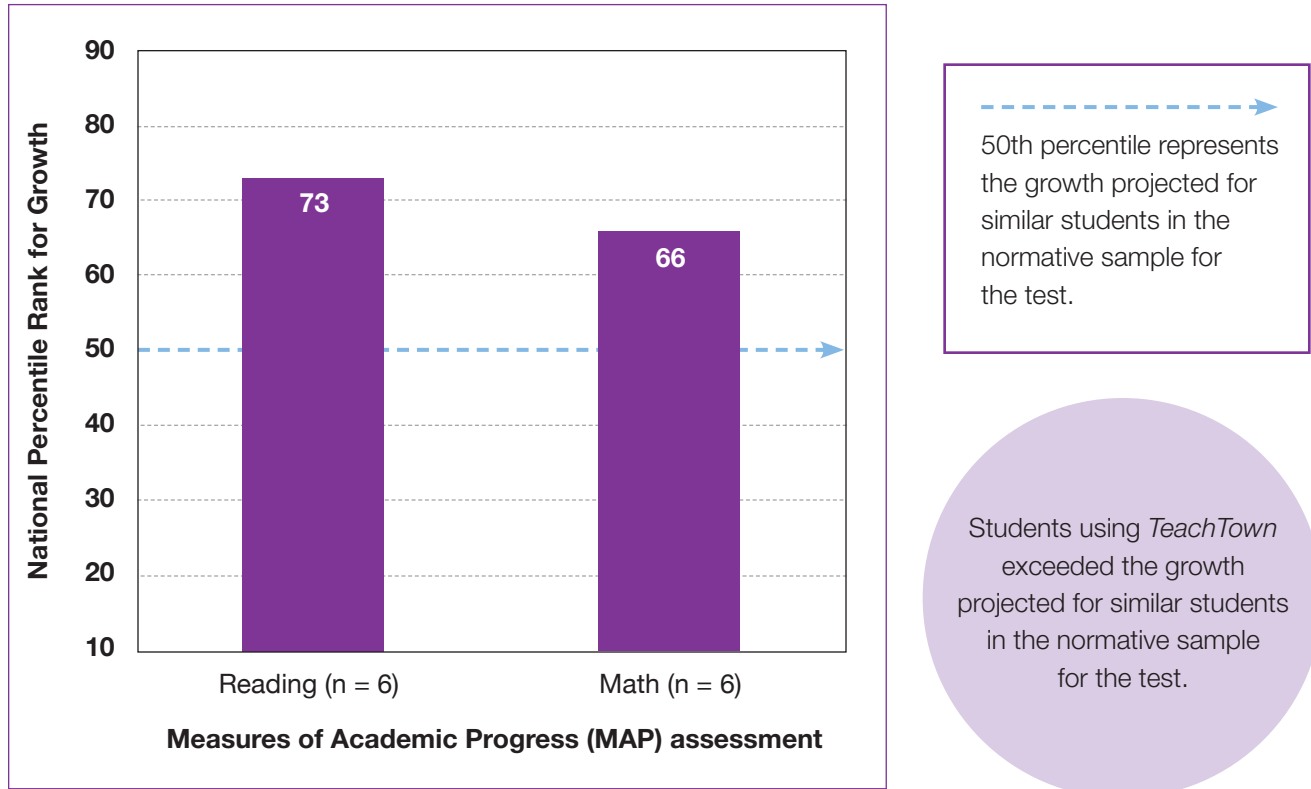
### Increased Access to General Education

Prior to the use of *TeachTown: Basics* and *TeachTown: Social Skills* in the fall of 2012, all 6 students were enrolled in a self-contained autism program. After three months of using TeachTown, 4 of the 6 students attended one or more general education special area class for 15 to 75 percent of the school day. By the end of the school year, all 6 students were taught in general education special area classes for 10 to 90 percent of the school day.

All students made clinically significant improvements in social skills and challenging behaviors during the use of *TeachTown: Basics* and *TeachTown: Social Skills*, based on teacher observation. Improvements included increased eye-gaze duration and joint attention behaviors, peer social greetings and praise, initiations and interactions with peers on the playground, and a reduction in the use of “time-outs” and other exclusionary discipline practices.

<sup>1</sup> Student growth in MAP RIT scores was measured by the Conditional Growth Index (CGI), a normative growth metric that shows how student growth compares to the growth of students across the nation. It provides context for how much growth a student showed compared to his or her growth projection. CGI takes into account the subject being assessed, grade level, and student's starting RIT score. CGI scores are expressed in standard deviation units and translate to national percentile ranks. A CGI score of 0 which corresponds to the 50th percentile means that a student showed the same amount of growth as his or her growth projection. Positive CGI scores (greater than 50th percentile) indicate that a student exceeded his or her growth projection. Conversely, negative CGI scores (less than the 50th percentile) indicate that a student's growth was less than his or her growth projection.

Figure 1. Measures of Academic Progress (MAP) national percentile rank for growth shown by students using *TeachTown: Basics* and *TeachTown Social Skills*.



**Conclusion**

Although the results have been obtained from self-contained classrooms with only three months of program use, first and second grade students with ASD showed educationally meaningful gains in reading and math as measured by a standardized achievement test that is aligned with national and state curricula and standards. The amount of growth exceeded the average gains made by students in the national population in the same grade and starting skill levels.

## Groden Center Day Program, Rhode Island

In the spring and summer of 2013, an independent study explored the use of the *TeachTown: Basics* curriculum at the Groden Center Day Program, a school that provides services for children and youth with severe developmental disabilities, autism and associated, severe behavioral challenges, located in Providence, Rhode Island. The participants were 31 students ages 8 to 20 years (average: 13.3 years), with a diagnosis of autism and/or pervasive developmental disorder, who were enrolled in nine self-contained classrooms. Over a six month period, students used the program an average of 3 sessions per week (range: 1 to 7 sessions) for an average of 43 minutes a week (range: 4 to 88 minutes) during leisure time. Data on general interest and satisfaction with the program were available for 25 students. Data on challenging or interfering behavior and academic progress as measured by the Assessment of Basic Language and Learning Skills-Revised (ABLLS-R; Partington, 2006) reading and mathematics skill areas were collected on a subsample of nine students, representing 30% of the group. Of the nine selected for behavioral and academic data collection, two did not take part in the program, one had behavioral challenges during the program, and one was hospitalized resulting in a sample size of five students (average age: 12.8 years).

### Results

The majority of students reported enjoying the *TeachTown: Basics* program and were engaged in it or had some interest in the program (**84%; see Figure 1**). Out of the five students whose behavior rates were tracked during their *TeachTown: Basics* sessions, none exhibited behavior problems in more than 5% of the sessions (**see Figure 2**).

**Figure 1. Student reports of interest and satisfaction with *TeachTown: Basics* (n=25).**

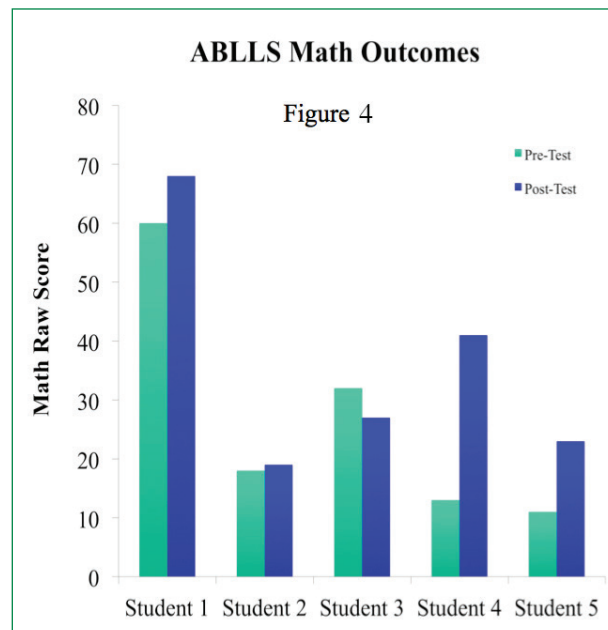
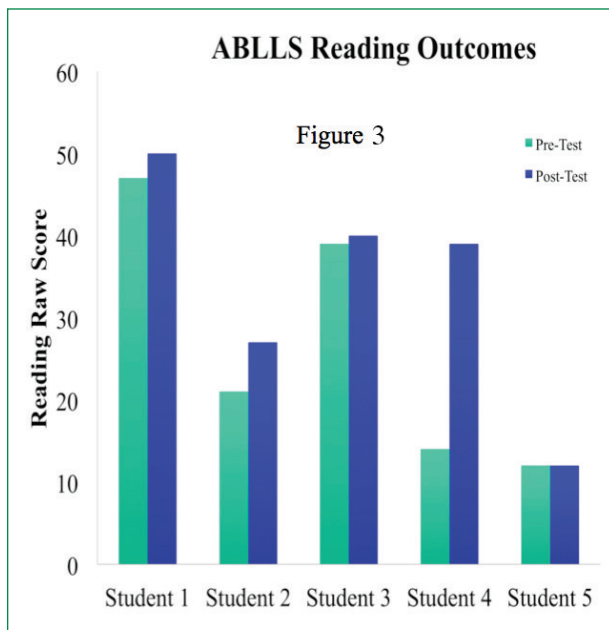
Enjoyed and Used Regularly	Some Interest	Behavior Problems Precluding Program Use	Disliked and Did Not Use Regularly
60%	24%	12%	4%

**Figure 2. Percentage of *TeachTown: Basics* sessions during which behavioral incidents were observed.**

Student 1	Student 2	Student 3	Student 4	Student 5
5.4%	no data	0%	2.2%	1.2%

Over six months of instruction, results from the pre- and posttest ABLLS-R reading and math skill areas indicated trends of improvement in basic reading and math skills. Each of the 5 in ABLLS scores for either reading or math, or both, as demonstrated below (see Figures 3-4):

**Figures 3-4. ABLLS reading and math outcomes using *TeachTown: Basics***



**Conclusion**

The authors concluded that the results of this study suggest that *TeachTown: Basics* provides an independent learning format that most students find interesting and enjoyable. They also concluded that *TeachTown: Basics* may be useful in helping to build learning skills across several learning domains for students who enjoy and are engaged in the program. Most importantly, this learning format can be effectively implemented with children and young adults with significant developmental disabilities, autism, and associated severe behavioral challenges.



## Evaluation of *TeachTown: Basics* Systemwide Data

### Background

During the 2011-2012 and 2012-2013 school years, 355 school districts in 41 states and 4 provinces across the United States and Canada, respectively, used *TeachTown: Basics* with 8,991 students who had disabilities or who were identified as at-risk for school failure in preschool through grade 8. This evaluation examined student usage and progress on the computer-assisted instruction portion of the curriculum during the implementation of *TeachTown: Basics* in districts using the curriculum's online reporting system.

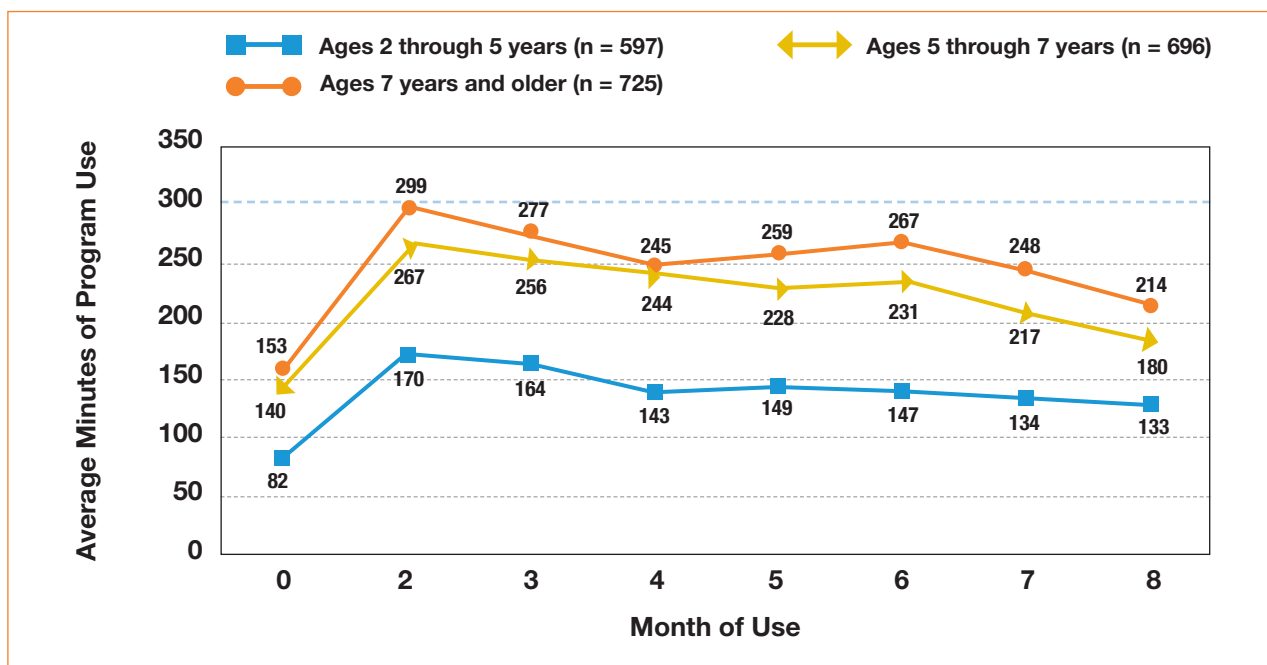
Results are reported for students who were at least 2 years old and who had used the program for at least eight months, which included 2,018 students who had used the program anywhere between 8 to 22 months. In addition to usage and progress data, the data set contained students' chronological age and gender. The mean age was 6.7 years old (range: 2.2 to 20.9 years old) with a standard deviation of 2.8. Approximately 76 percent of the sample was male.

This evaluation addressed the following questions:

#### (1) How much do students use *TeachTown: Basics* and does usage change over time?

Figure 1 shows the average total amount of time students spent on the computer-based lessons over monthly intervals. Across all age subgroups, program usage peaked in month two and then stabilized across months four through six.<sup>1</sup> Average daily usage in months three through eight ranged from 7 to 13 minutes; the minimum recommended usage is 15 minutes daily.

**Figure 1. Total minutes spent on computer-based program over eight months of use disaggregated by students' chronological age.**



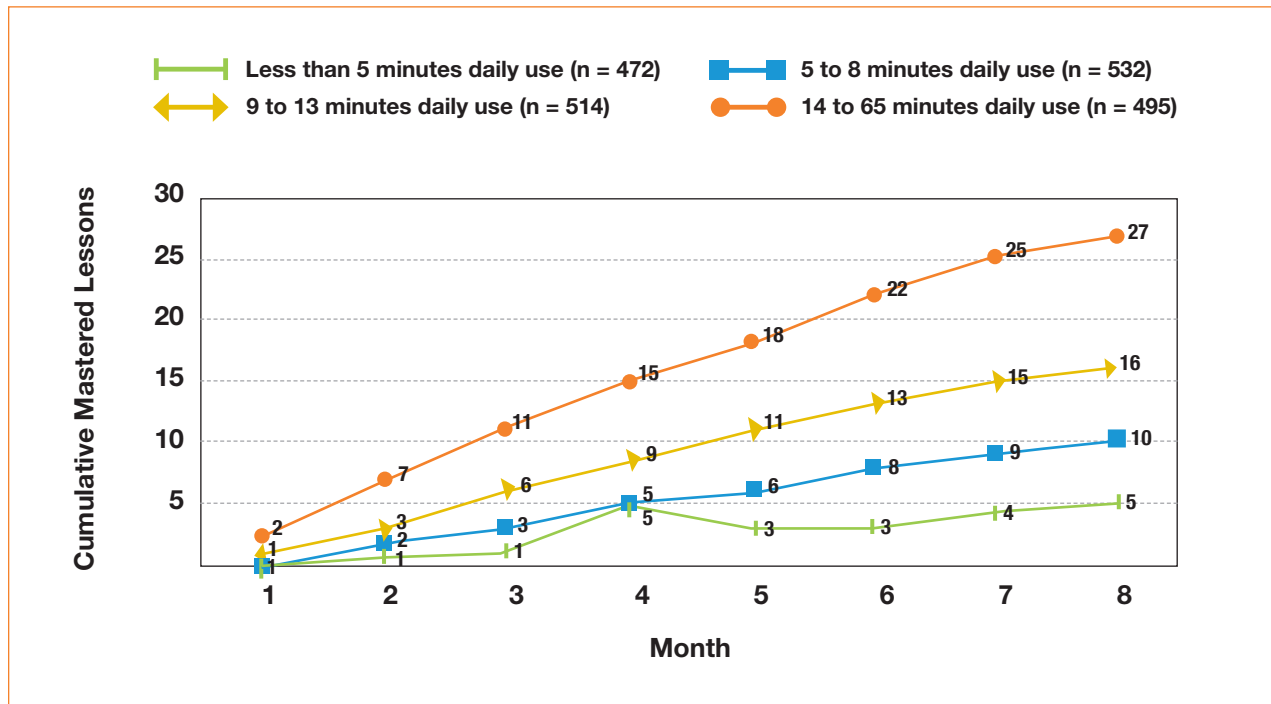
Note. n = number of students

Note. Dotted line represents the minimum recommended usage.

**(2) How much progress did students make over eight months of program use?**

Approximately 90 percent of students who used *TeachTown: Basics* (or 9 out of 10 students) showed growth in the curriculum as defined by mastering anywhere between 5 and 206 lessons. Figure 2 shows the average number of lessons mastered for students broken out by the amount of time spent on the program.<sup>2</sup> The findings indicated that after investing 14 to 65 minutes daily on the program over eight months, students mastered 27 lessons which represent an average of 81 concepts or skills learned.<sup>3</sup> After investing 5 to 8 minutes daily on the program over eight months, students mastered 10 lessons which represent an average of 30 concepts or skills. After investing less than 5 minutes daily on the program over eight months, students mastered 5 lessons which represent on average 15 concepts or skills.

**Figure 2. Cumulative number of lessons mastered over eight months of use disaggregated by amount of program use.**



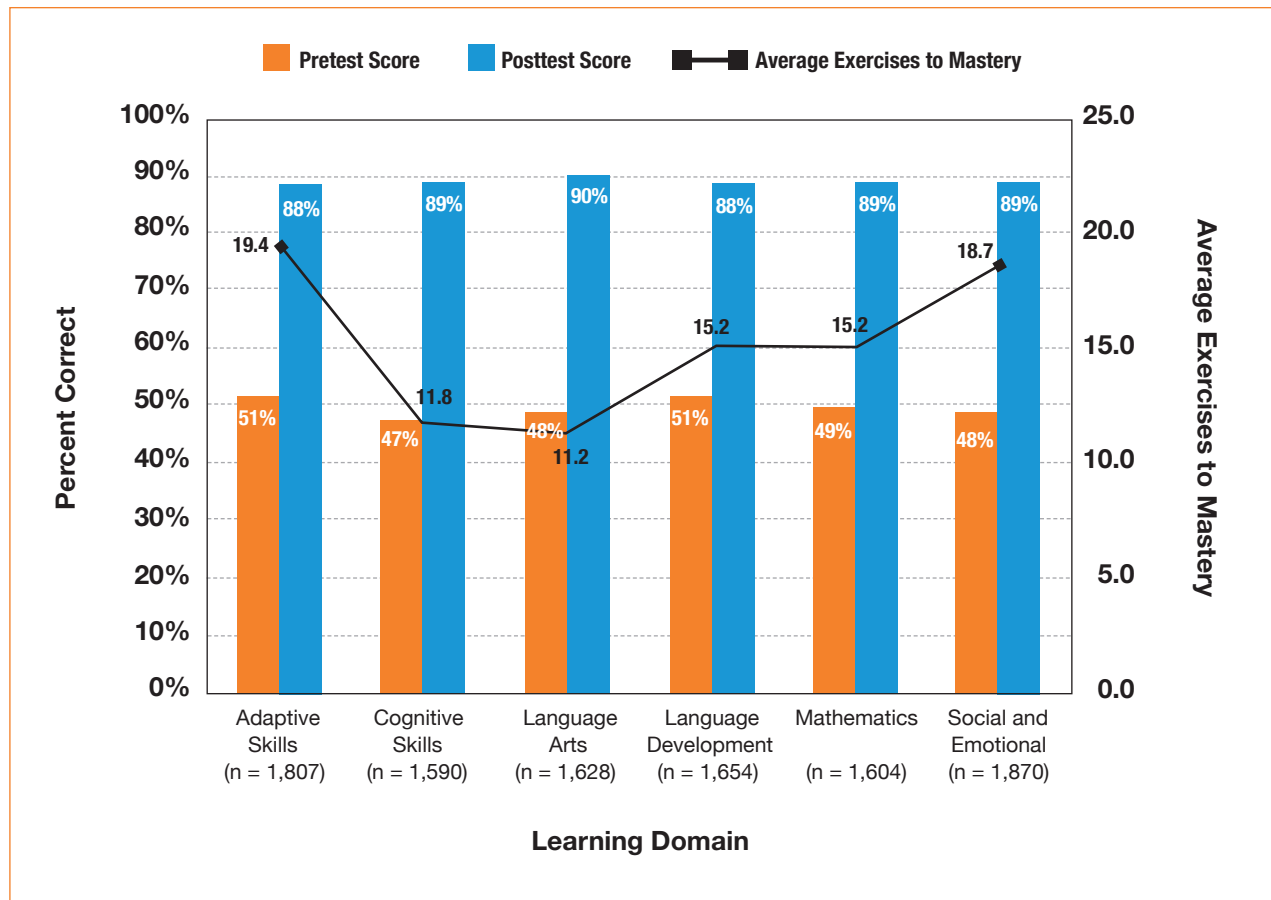
<sup>2</sup>The standard deviation for cumulative lessons mastered was high across months one through eight (range: 3.8 to 13.3 lessons mastered), indicating great variability among students in the number of lessons mastered.

<sup>3</sup>Each lesson in *TeachTown: Basics* covers anywhere between 1 and 4 concepts with the majority covering 4 concepts.

**(3) How many training exercises do students complete before passing a lesson's posttest and does the number of exercises to mastery vary across learning domains?**

Figure 3 displays the gain in percent correct from pretest to posttest for mastered lessons and the average number of training exercises taken to master the lessons. Each lesson begins with a pretest. If the student scores less than 80% on the pretest, he or she proceeds to the training exercise. Once the student answers 80% or more of the questions on the training exercises correctly the student continues on to the next exercise or posttest. The student must answer 80% or more of the questions correctly on the posttest in order to master a lesson. In every learning domain, students showed statistically significant gain in percent correct from pretest to posttest. The average number of exercises taken to master a lesson varied across learning domains ranging from 11 exercises in Language Arts to 19 exercises in Adaptive Skills and Social and Emotional.<sup>4</sup>

**Figure 3. Gain in average percent correct on pretests and posttest and average number of training exercises completed for mastered lessons disaggregated by learning domain.**



## Conclusion

The purpose of this evaluation was to examine program usage and progress data of students with disabilities or who were identified as at-risk for school failure in preschool through middle school after receiving eight months of instruction in *TeachTown: Basics*. The results indicated that although average usage was lower than the minimum amount of usage recommended by the publisher, usage was consistent over time.

Further, students who spent more time on the program mastered substantially more lessons and material than students who spent little time on the program. More specifically, students who spent a median of 18 minutes daily on the program—which is just over the minimum amount of time recommended by the publisher, mastered 27 lessons representing on average 81 concepts or skills over eight months. By contrast students who spent a median of 4 minutes daily on the program mastered five lessons representing 15 concepts or skills over eight months.<sup>5</sup>

<sup>4</sup>The standard deviation for average exercises to mastery was high across domains (range: 13.0 to 21.8 exercises), indicating great variability among students in the average number of exercises to mastery.

<sup>5</sup>Usage in the high program usage subgroup ranged from 13.5 to 65 minutes daily and 18 minutes daily represents the middle of the distribution within the high usage subgroup. Usage in the low program usage subgroup ranged from virtually no program usage to just over 5 minutes daily and 4 minutes daily represents the middle of the distribution within the low usage subgroup.

## References

- Brigance, A. (2004). *The Brigance Inventory of Early Development*. North Billerica, MA: Curriculum Associates.
- Dingfelder, H.E. & Mandell, D.S. (2011). Bridging the research-to-practice gap in autism intervention: an application of diffusion of innovation theory. *Journal of Autism and Developmental Disorders*, 41, 597-609.
- Hume, K. A., & Odom, S. L. (2011). Best practices, policy, and future directions: Behavioral and psychosocial interventions. In D. Amaral, G. Dawson, & D. Geschwind (Eds.), *Autism spectrum disorders* (pp. 1295-1308). New York, NY: Oxford University Press.
- Kasari, C. & Smith, T. (2013). Interventions in schools for children with autism spectrum disorder: Methods and recommendations. *Autism*, 17, 254-267.
- National Autism Center. (2009). *National standards project findings and conclusions*. Randolph, MA: Author.
- Newborg, J. (2005). *Batelle Developmental Inventory, Second Edition*. Itasca, IL: Riverside Publishing.
- Northwest Evaluation Association. (2009). *Technical manual for Measures of Academic Progress™ and Measures of Academic Progress for primary grades™*. Lake Oswego, OR: Author.
- Partington, J. W. (2006). *The Assessment of Basic Language and Learning Skills-Revised Protocol*. Pleasant Hills, CA: Behavior Analysts, Inc.
- Strain, P.S., Schwartz, I.S., & Barton, E.E. (2011). Providing interventions for young children with autism spectrum disorders: What we still need to accomplish. *Journal of Early Intervention*, 33(4), 321-332.
- Whalen, C., Moss, D., Ilan, A. B., Vaupel, M., Fielding, P., MacDonald, K., Cernich, S., Symon, J. (2010). Efficacy of *TeachTown: Basics* computer-assisted intervention for the Intensive Comprehensive Autism Program in Los Angeles Unified School District. *Autism*, 14(13), 179-97.
- Wong, C., Odom, S. L., Hume, K. Cox, A. W., Fettig, A., Kucharczyk, S., ... Schultz, T. R. (2013). *Evidence-based practices for children, youth, and young adults with Autism Spectrum Disorder*. Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, Autism Evidence-Based Practice Review Group.
- Woodard, C. R. (2014). *Teachtown: A trial implementation for students with autism spectrum disorders*. Poster submitted for 16th International Conference on Autism, Intellectual Disability, and Developmental Disabilities, 2015.