



**The Vista School<sup>®</sup>**

## **The Impact of the Competent Learner Model at the Vista School**

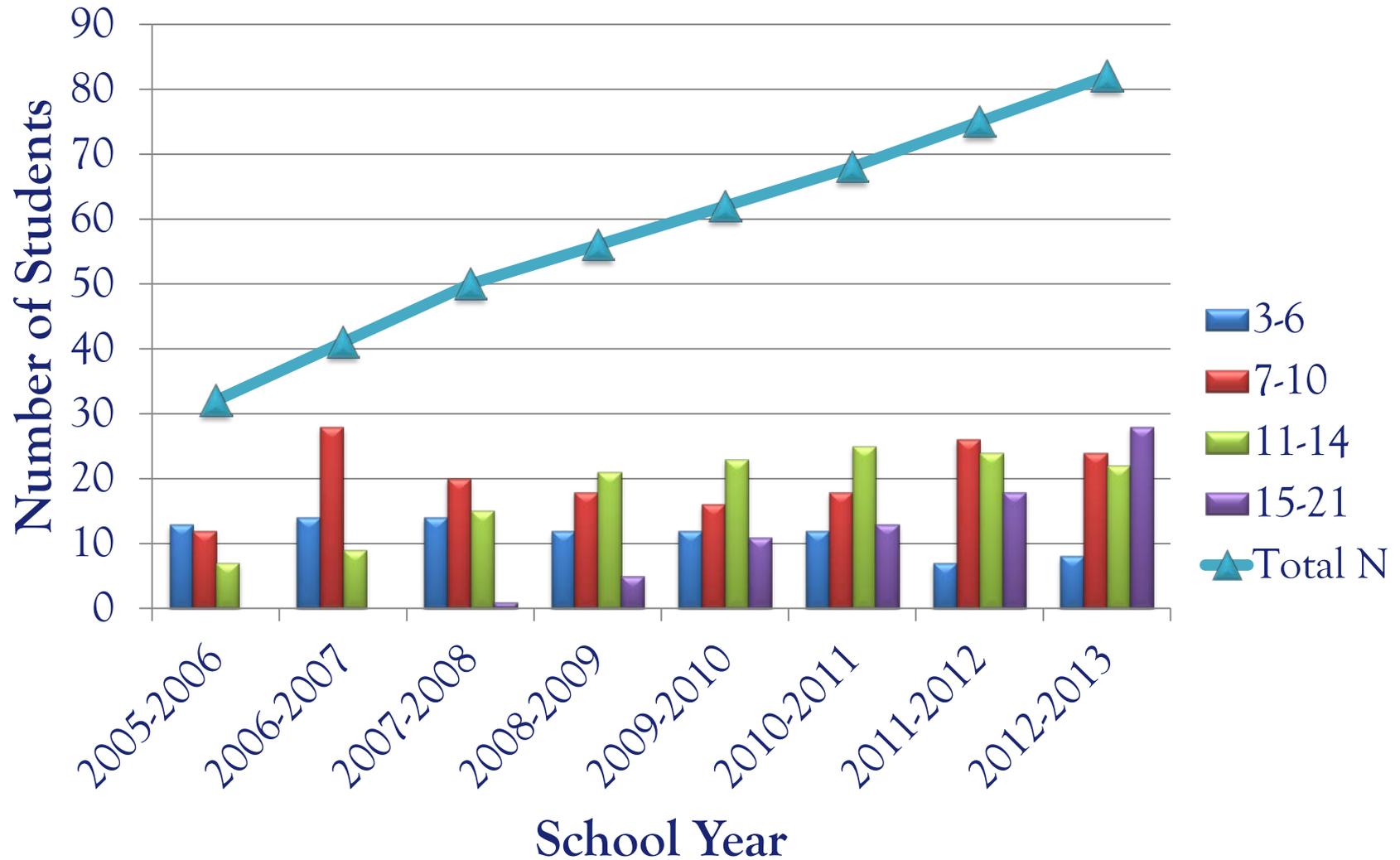
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★ Unique Potential Within Reach ★

# The Vista School

- Founded in 2002, The Vista School is a collaborative effort of dedicated parents, educators, and mental health professionals
  - Exists to bring ABA-based autism education and behavioral services to Central Pennsylvania
  - Serves students who need moderate to intensive support in a specialized environment
  - Delivers intensive educational services within a multi-disciplinary model framework
  - Supports programming with Competent Learner Model, Precision Teaching, and Direct Instruction

# Vista Students by Age



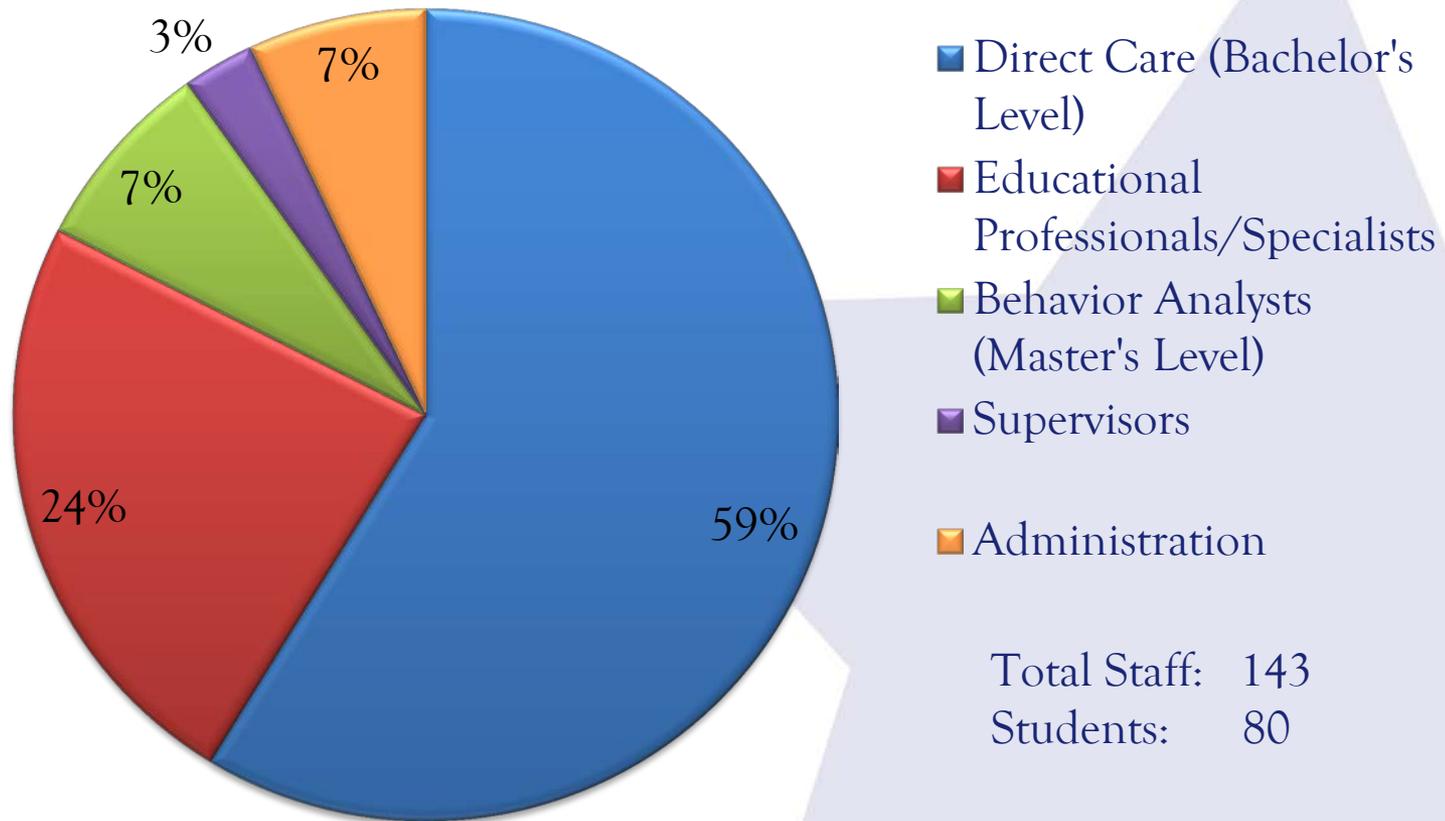
# Program Design

- Dually licensed facility
  - Licensed private academic school
  - Licensed partial hospitalization program
- Both programs braid within classrooms
  - Small class sizes
  - Structured programs
  - Systematic instruction
  - Standardized data collection
  - Graphic data displays and analysis

# Staffing Design

- Multi-disciplinary teams (MDT)
  - Special education teacher
  - Behavior analyst
  - Speech-language pathologist
  - Occupational therapy
  - Training and Coaching coordinator
- High levels of Direct-Care professional support staff
- Individualized Education Plans (IEPs) and Behavior Treatment Plans guide daily interventions

# Vista Staff Demographics 2012-2013 School Year



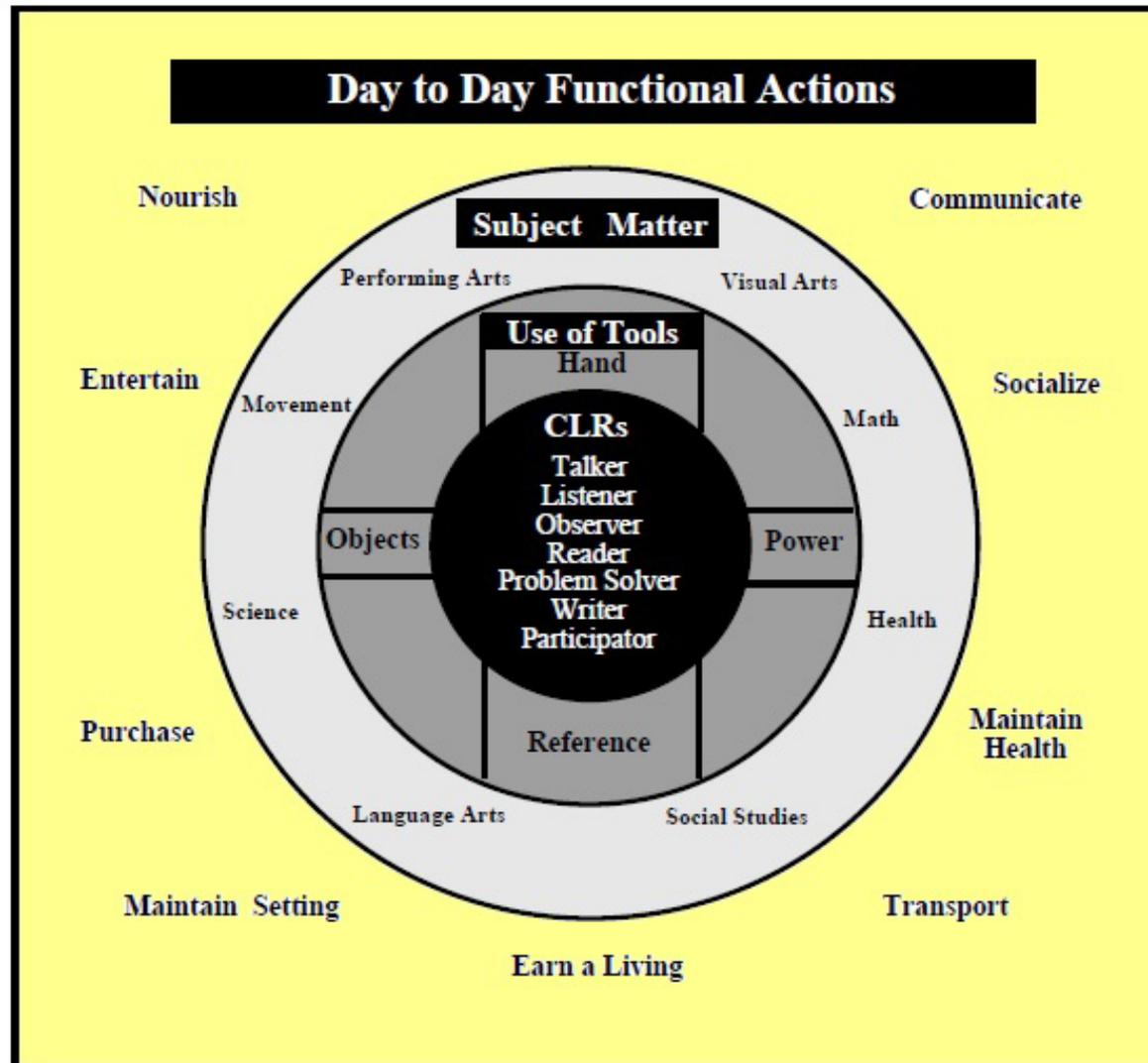
# Program Specifics

- Empirically supported treatments and curricula
  - Academics (SRA)
  - Competent Learner Model
- Precision Teaching
- Basic functional life skills
- Skinner's analysis of verbal behavior
- Teaching across all instructional conditions
- Imbedded therapies (OT, SLP, PT)
- Instructional coaching for staff ★ Unique Potential Within Reach ★

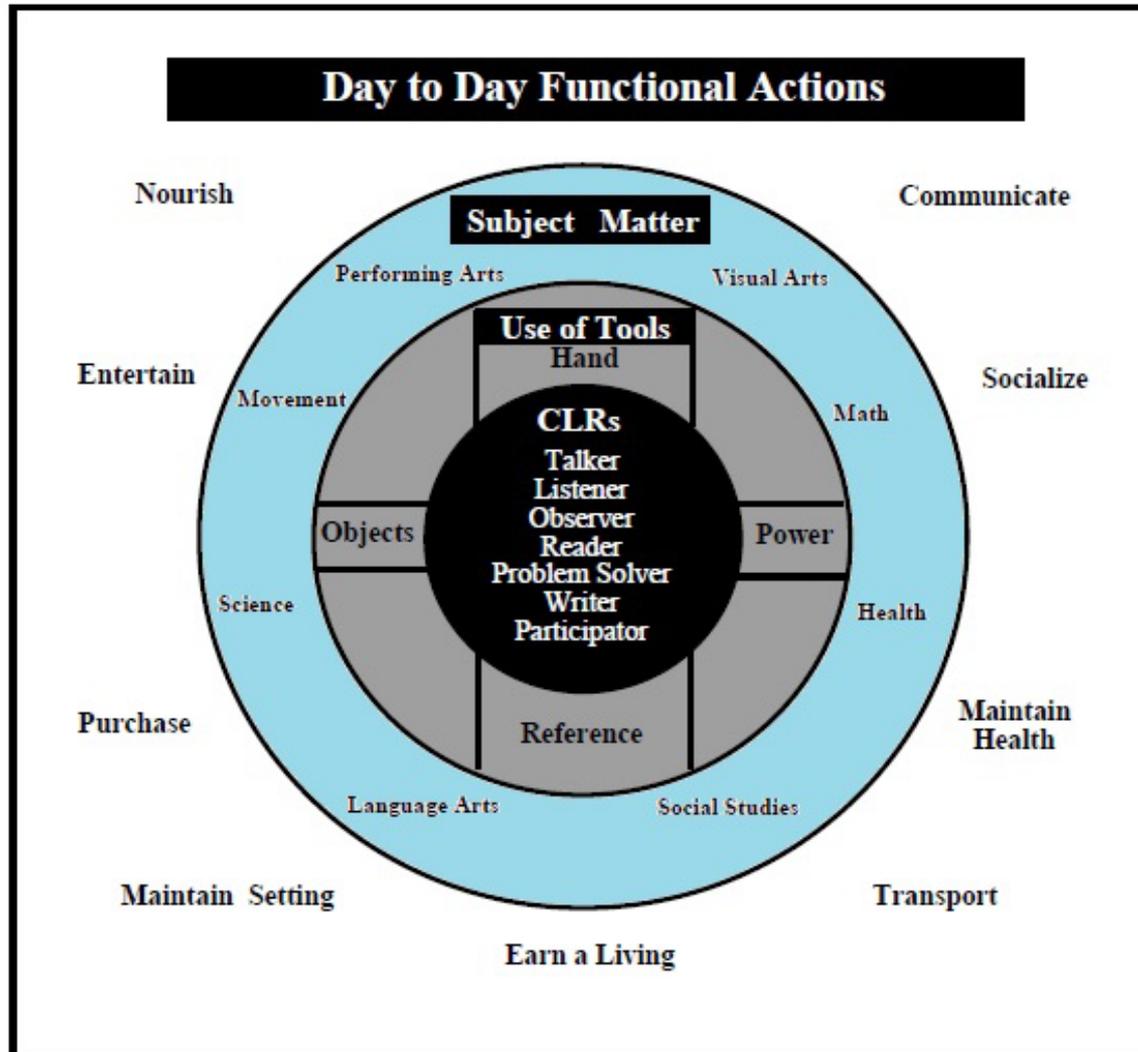
# Competent Learner Model (CLM)

- Derived from 3 different theoretical foundations:
  - 1) Applied Behavior Analysis (ABA), including VB
  - 2) Direct Instruction (DI)
  - 3) Precision Teaching (PT)
- Resources for teaching, training, and coaching
- **Teaching** basic skills with comprehensive curriculum
  - Problem Solving
  - Participation
  - Listening
  - Observing
  - Talking
  - Reading
  - Writing

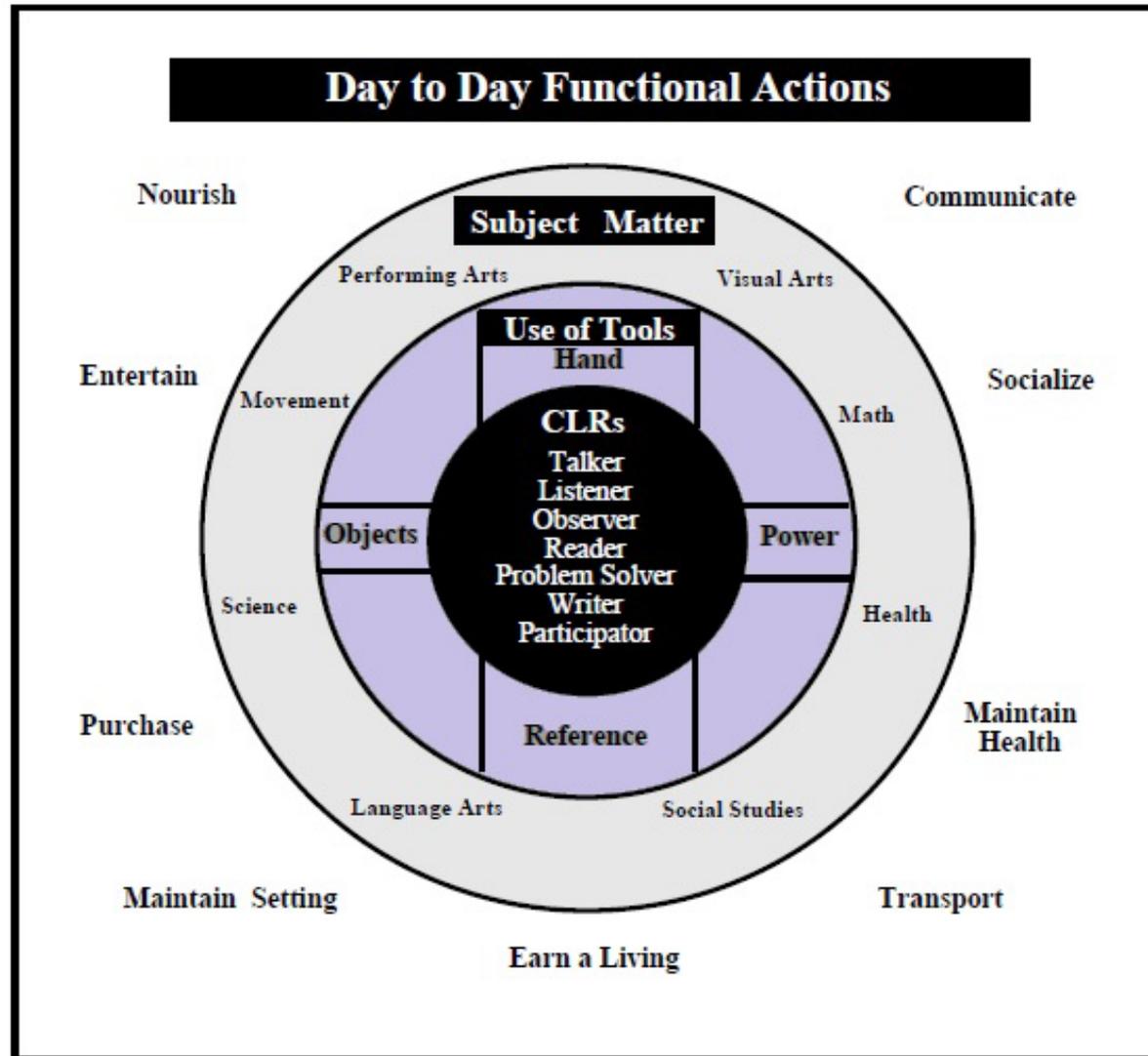
# CLM: Developing Competent Learners



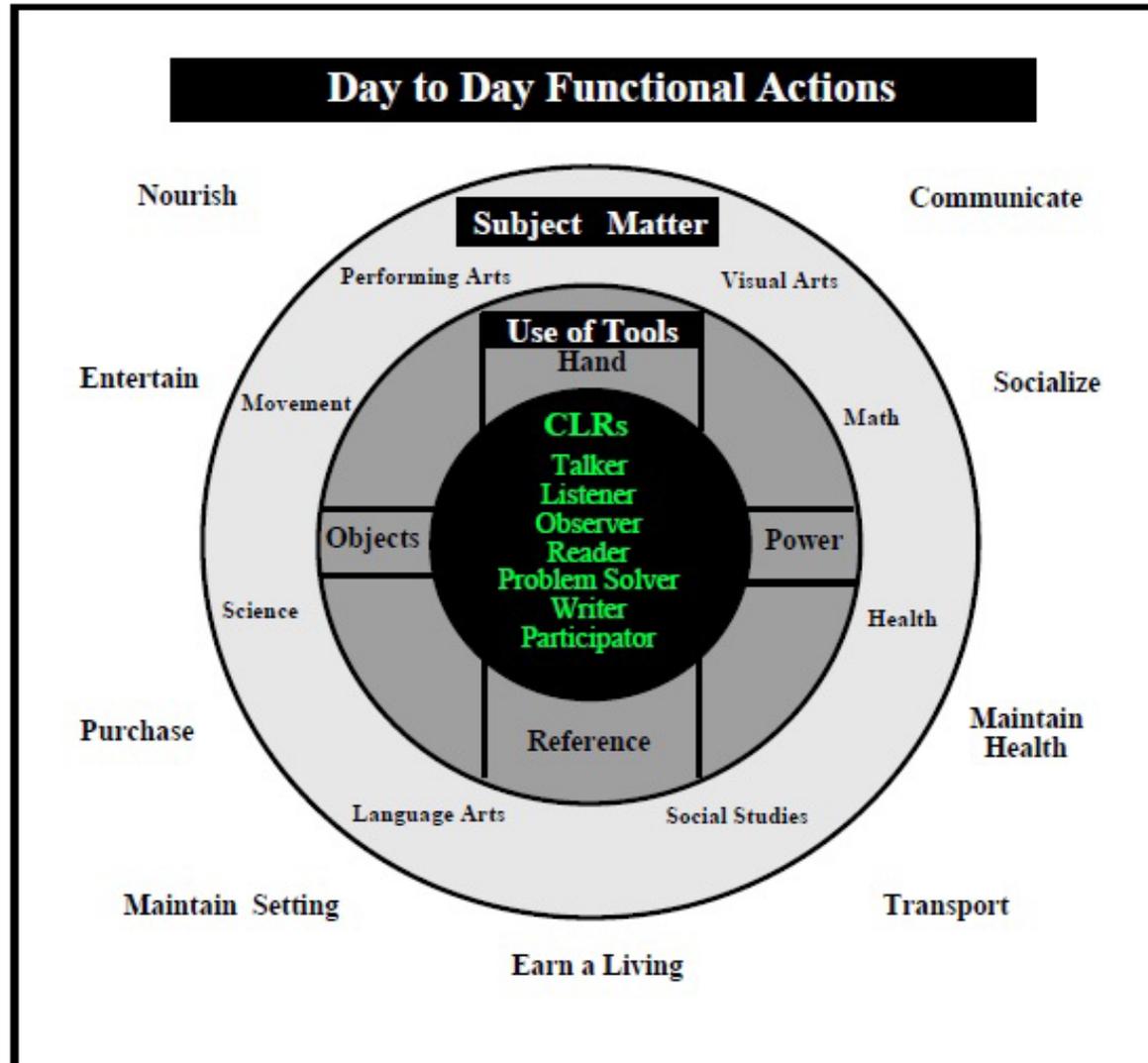
# CLM: Developing Competent Learners



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# CLM Training and Coaching

- **Training**

- Single (core) curriculum of staff training
  - ABA
  - PSI framework
  - Developed via imbedded coaches

- **Coaching**

- Imbedded professionals training in PSI and best practice coaching techniques
- Bring instructors to mastery with instructional practices

# Data-Based Decision Making: Individually and Organizationally

- Data collection and progress monitoring systems
- Measurement of micro- and macro- student achievements and outcomes
  - Tracking individual, student progress
    - Daily to monthly progress of IEP and Treatment Plan objectives (MDT staff)
  - Tracking group progress at the school level
    - Annual progress monitoring

# Hypotheses

Following two years of treatment at Vista, we expect that participants':

1. Adaptive behavior skills will increase
2. Symptoms associated with ASDs will decrease
3. Communication competencies, specifically auditory and expressive communication, will increase
4. Parenting stress levels will decrease

# Annual Progress Monitoring

- Annual assessments completed across all students, at the same time each year
- Measures selected to assess core areas of deficit common to ASD sensitive to our programming
  - Relatively easy to administer
  - Ability to show growth
- Measures must meet set of criteria for inclusion in the process

# Vineland Adaptive Behavior Scale – 2<sup>nd</sup> Edition

- Caregiver and teacher report of adaptive behaviors
- 5 Domains:
  - 1) **Communication:** Receptive, Expressive, Written
  - 2) **Daily Living:** Personal, Domestic, Community, Academic
  - 3) **Socialization:** Interpersonal Relationships, Play & Leisure, Coping
  - 4) **Motor Skills:** Fine and Gross
  - 5) **Maladaptive Behavior:** Internalizing & Externalizing
- Scoring:
  - Domain = mean of 100 (SD = 15)
  - Subdomain = mean of 15 (SD = 3)
- Normative Group: A sample representative of the entire U.S. population

- **Gilliam Autism Rating Scale – 2<sup>nd</sup> Edition (GARS-2)**
  - Behavior Analyst report of severity of autism symptoms
  - 3 Subscales:
    - 1) Stereotyped Behaviors
    - 2) Communication (verbal & nonverbal)
    - 3) Social Interaction
  - Normative Score = mean of 100 (SD = 15)
  - The normative group is drawn from a population of children ages 3 to 22 who have been diagnosed as having autism
- **Preschool Language Scale (PLS)\* – 4<sup>th</sup> & 5<sup>th</sup> Editions**
  - Report of receptive and expressive language skills
  - Raw scores used in analysis
  - Set of predetermined testing accommodations

- **Parenting Stress Index Short Form– 3<sup>rd</sup> Edition (PSI/SF)**

- Areas of Scoring:

- 1) Parental Distress
- 2) Parent-Child Dysfunctional Interaction
- 3) Difficult Child
- 4) Total Stress

- **Behavior Problems Inventory - 01 (BPI)**

- Measurement of maladaptive behaviors (frequency & severity)

- Subsets:

- 1) Self-Injurious Behavior
- 2) Aggressive/Destructive Behavior
- 3) Stereotyped Behavior

# Participants

## (Vineland-II, GARS-2, PLS)

Demographic Variables	Mean (Standard Deviation)
Gender (male/female)	86%/14%
Child age in years	8.2 (3.4)
Child IQ	47.5 (15.7)
Child Ethnicity (non-minority/minority)	84%/16%
Caregiver Marital Status (married/not married)	85%/15%
Years of Caregiver Education	15.0 (2.4)
Caregiver Employment Status (employed/unemployed)	95%/5%
Annual Family Income (< \$20k - \$70k / >\$70k)	33%/67%

N=79

# Results: Summary

- Data analyzed across two time points:
  - 1) Time 1: during first year at Vista
  - 2) Time 2: after 2 years at Vista
- Green indicates  $p < .05$
- ↑ indicates significant improvement between time 1 and time 2
- ↓ indicates significant regression between time 1 and time 2

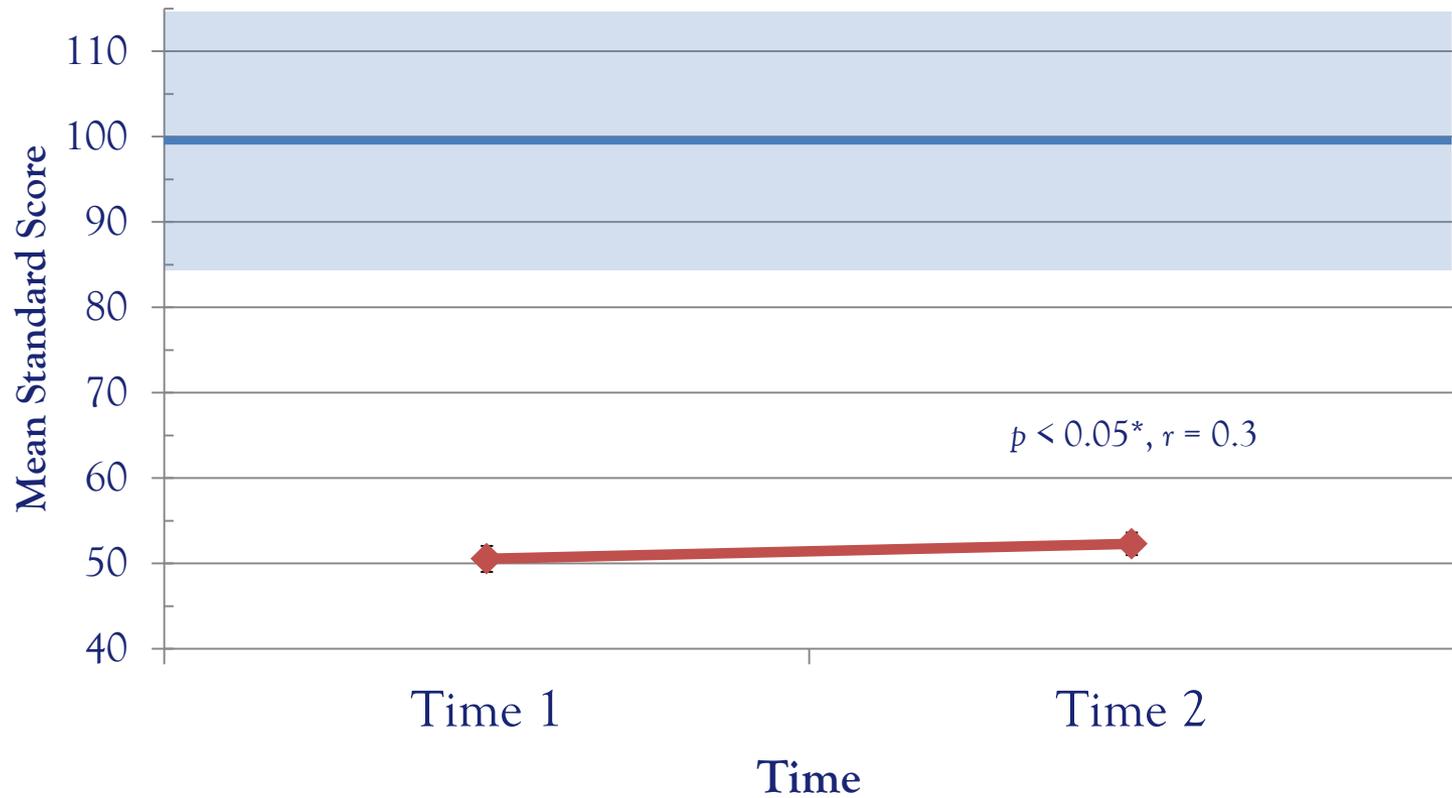
**Table 1: Differences in scores between time 1 and time 2**

Scale	Subscale and Direction of Change	Sig.
Vineland-II	Adaptive Behavior ↑	.013
	Receptive Language	.291
	Expressive Language	.267
	Written Language ↓	.023
	Communication	.216
	Personal ↑	.048
	Domestic ↓	.046
	Academic	.103
	Community ↓	.004
	School Community ↑	.029
	Daily Living Skills	.073
	Interpersonal ↑	.001
	Play and Leisure Skills ↑	.000
	Coping ↑	.000
	Socialization ↑	.000
	Gross Motor Skills	.289
Fine Motor Skills	.215	
Motor Skills	.332	
Gilliam Autism Rating Scale	Autism Index ↑	.001
	Stereotyped Behavior ↑	.048
	Communication	.137
Preschool Language Scale	Social Interaction ↑	.000
	Auditory Comprehension ↑	.000
	Expressive Communication ↑	.000

*Note:* All tests are dependent one-tailed *t* tests and all of the Motor Skills measures were estimated for participants ages seven to 21 years.

# Results: Vineland-II

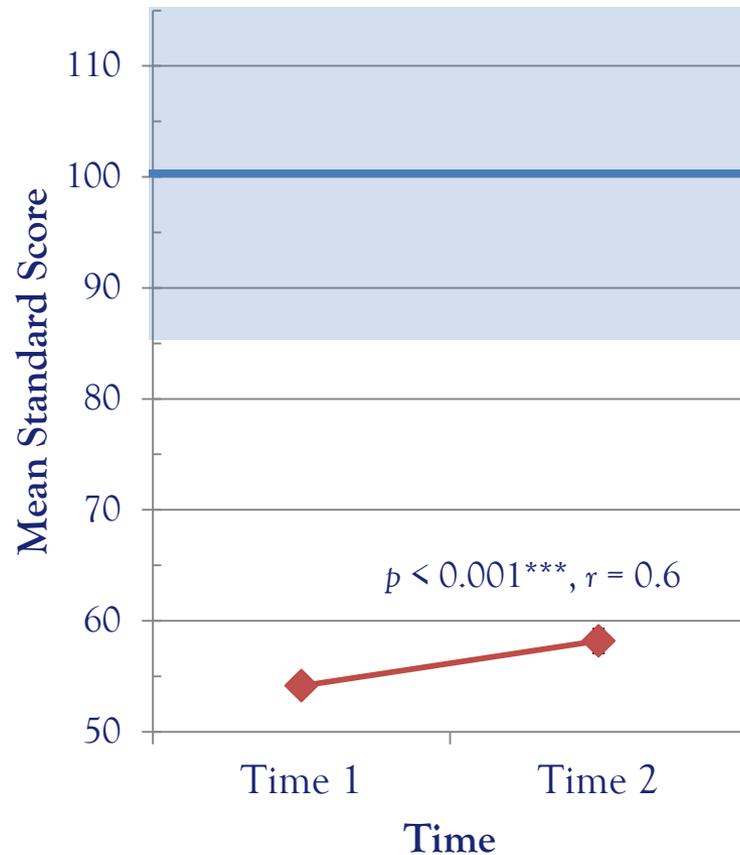
## Adaptive Behavior Composite



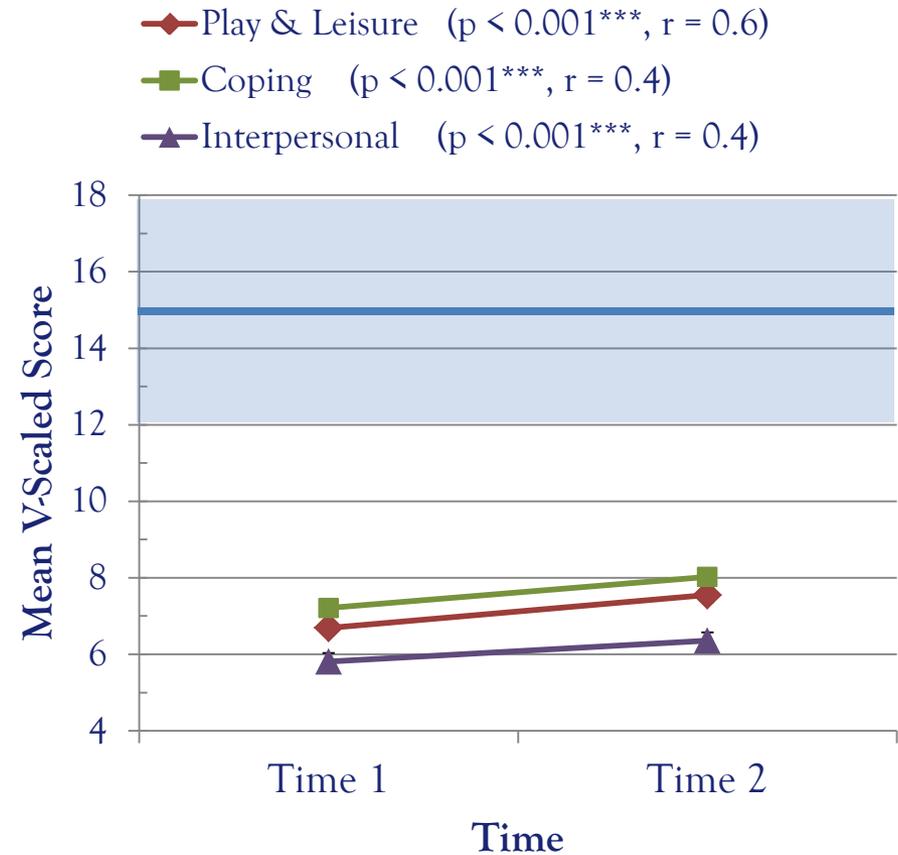
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# Results: Vineland-II

## Socialization Domain



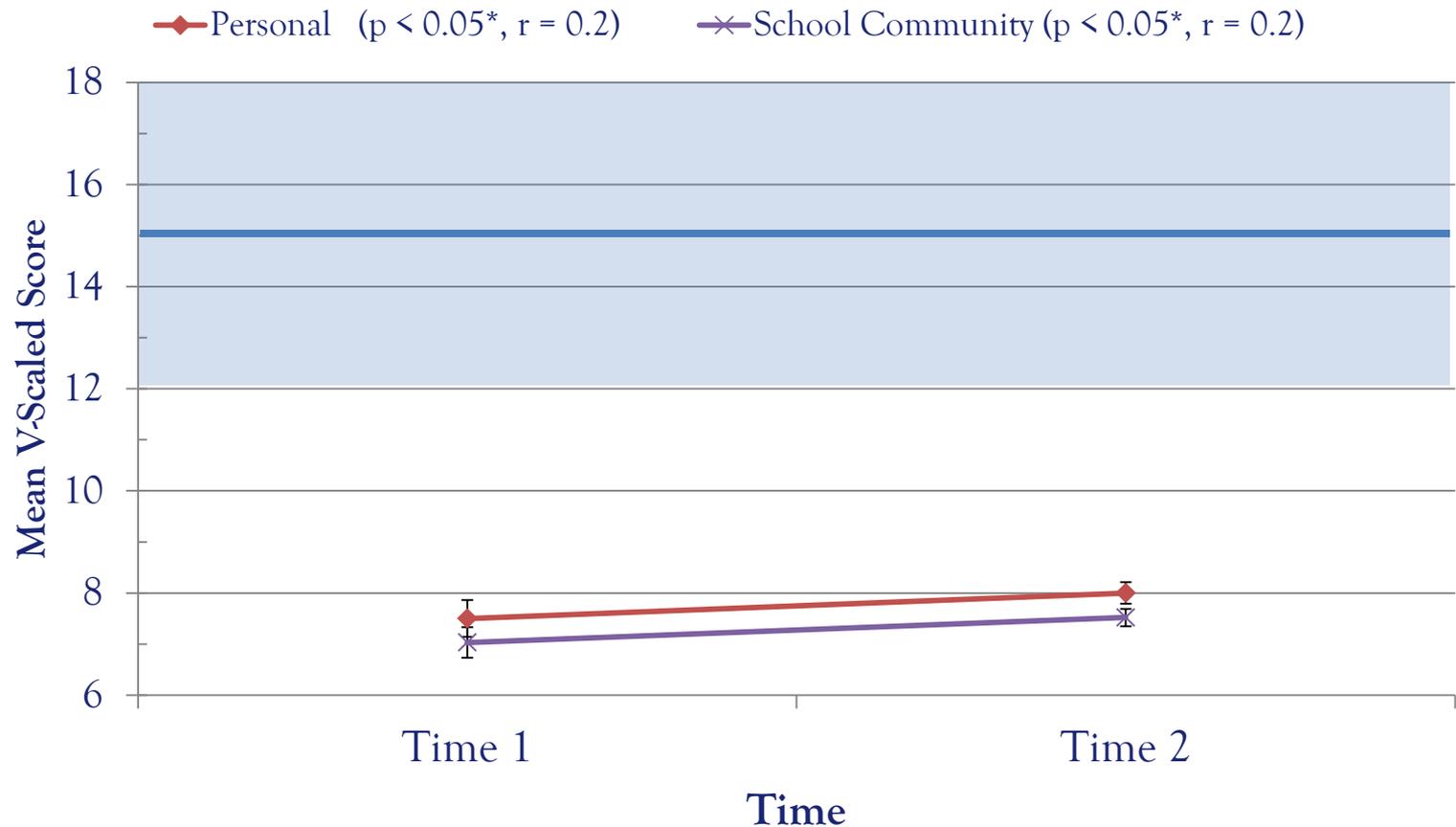
## Socialization Sub-Domains



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# Results: Vineland-II

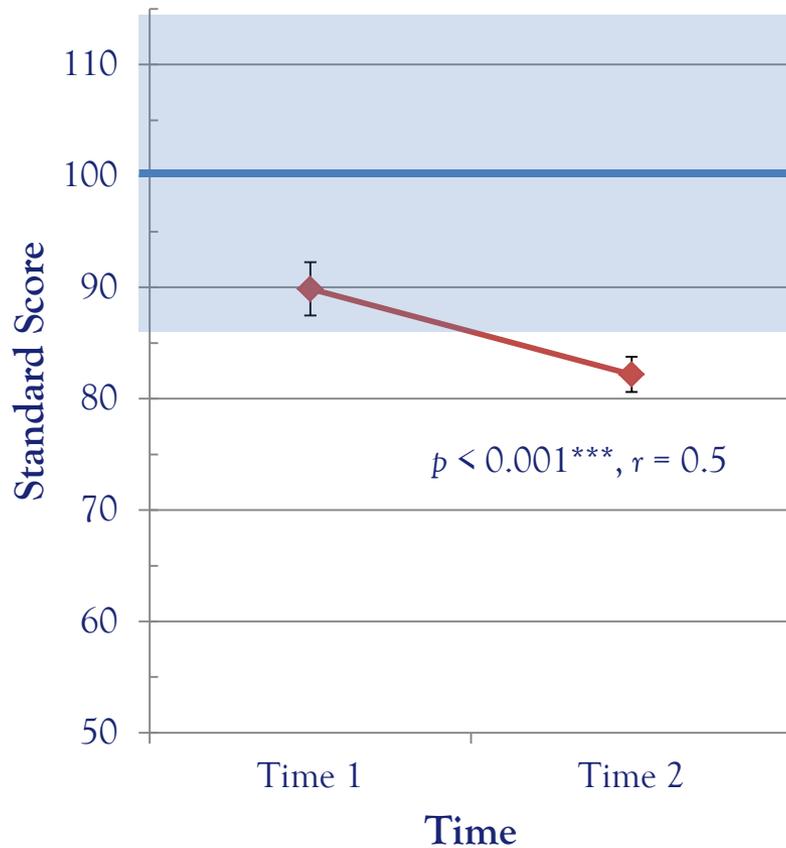
## Daily Living Skills Sub-Domains



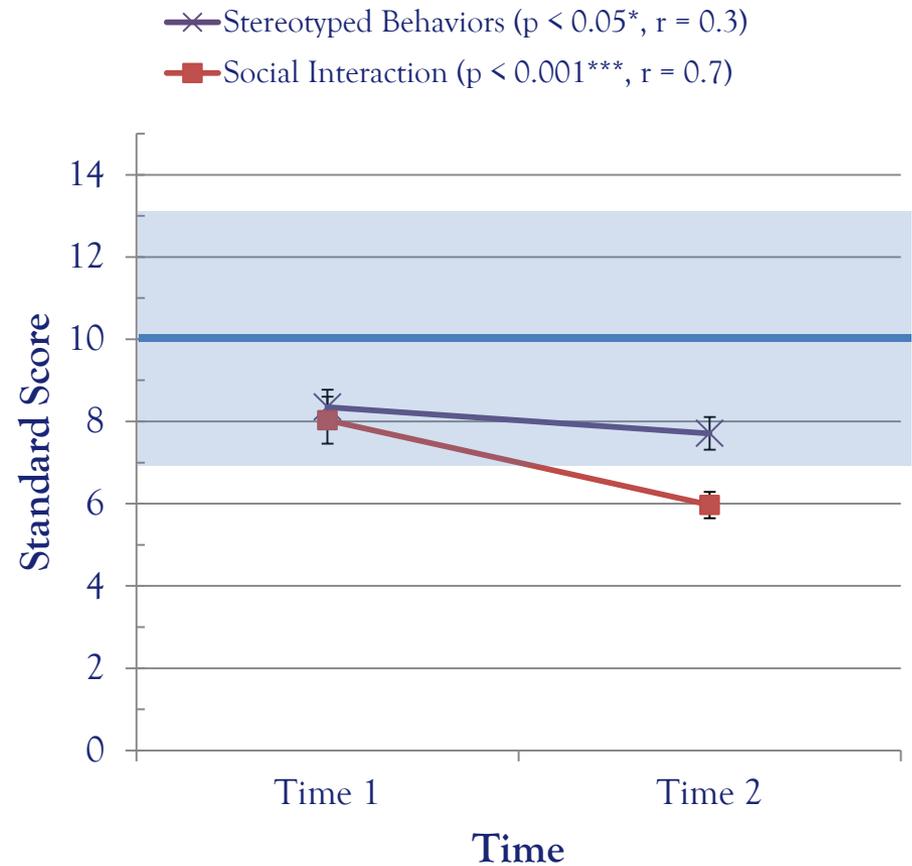
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# Results: GARS-2

## Autism Index

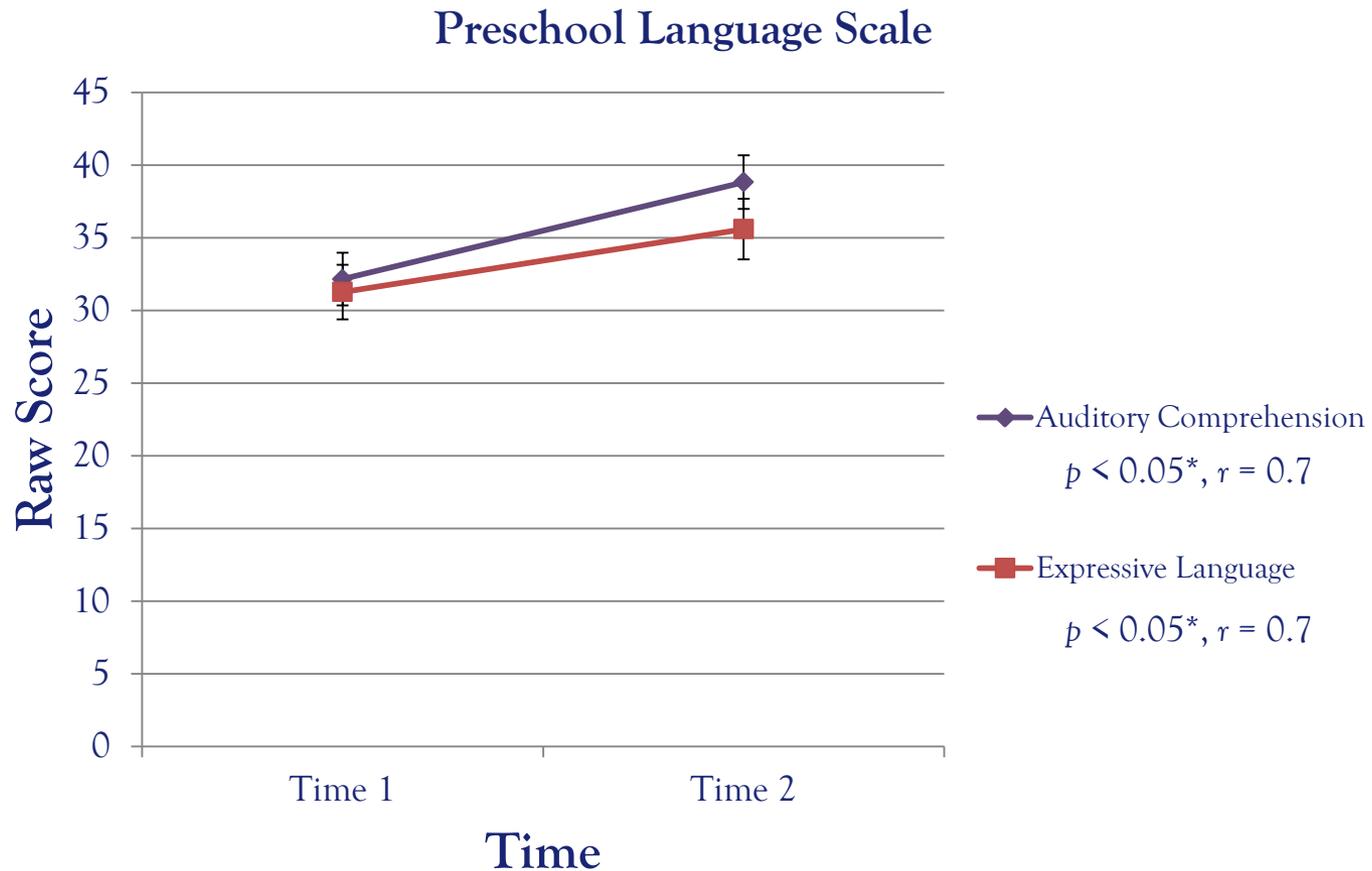


## GARS Subscales



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# Results: Preschool Language Scale



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# Participants

## (2012 Annual Progress Monitoring Assessments)

Demographic Variables	Mean (Standard Deviation)
Gender (male/female)	92%/8%
Child age in years	12.4 (4.3)*
Child IQ	44.8 (12.9)
Child Ethnicity (non-minority/minority)	81%/19%
Caregiver Marital Status (married/not married)	85%/15%
Years of Caregiver Education	15.1 (2.3)
Caregiver Employment Status (employed/unemployed)	95%/5%
Annual Family Income (<\$20k - \$70k / >\$70k)	38%/63%

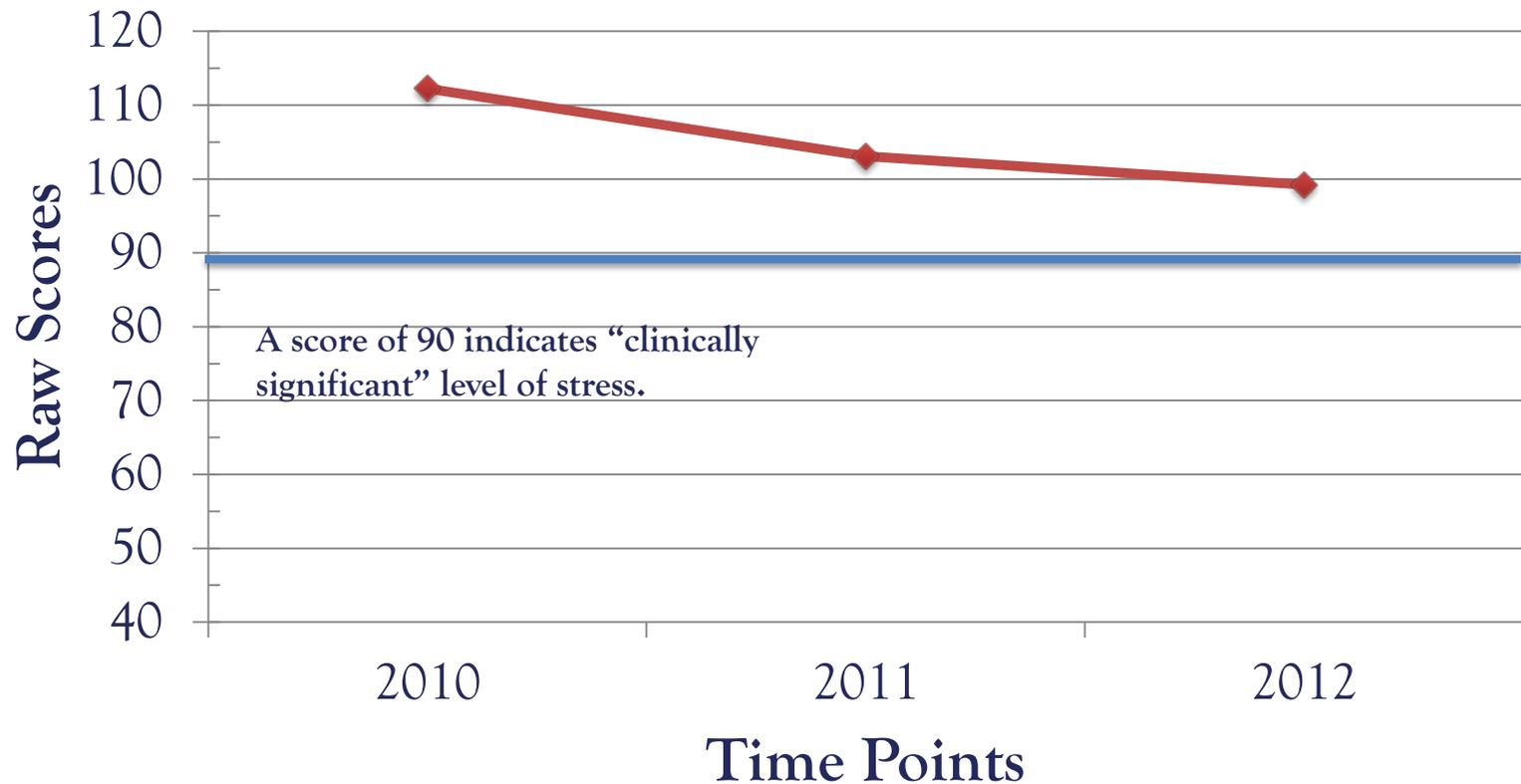
N = 85

\*Denotes a change from the previous set of participant demographics

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# Results: Parenting Stress Over Time

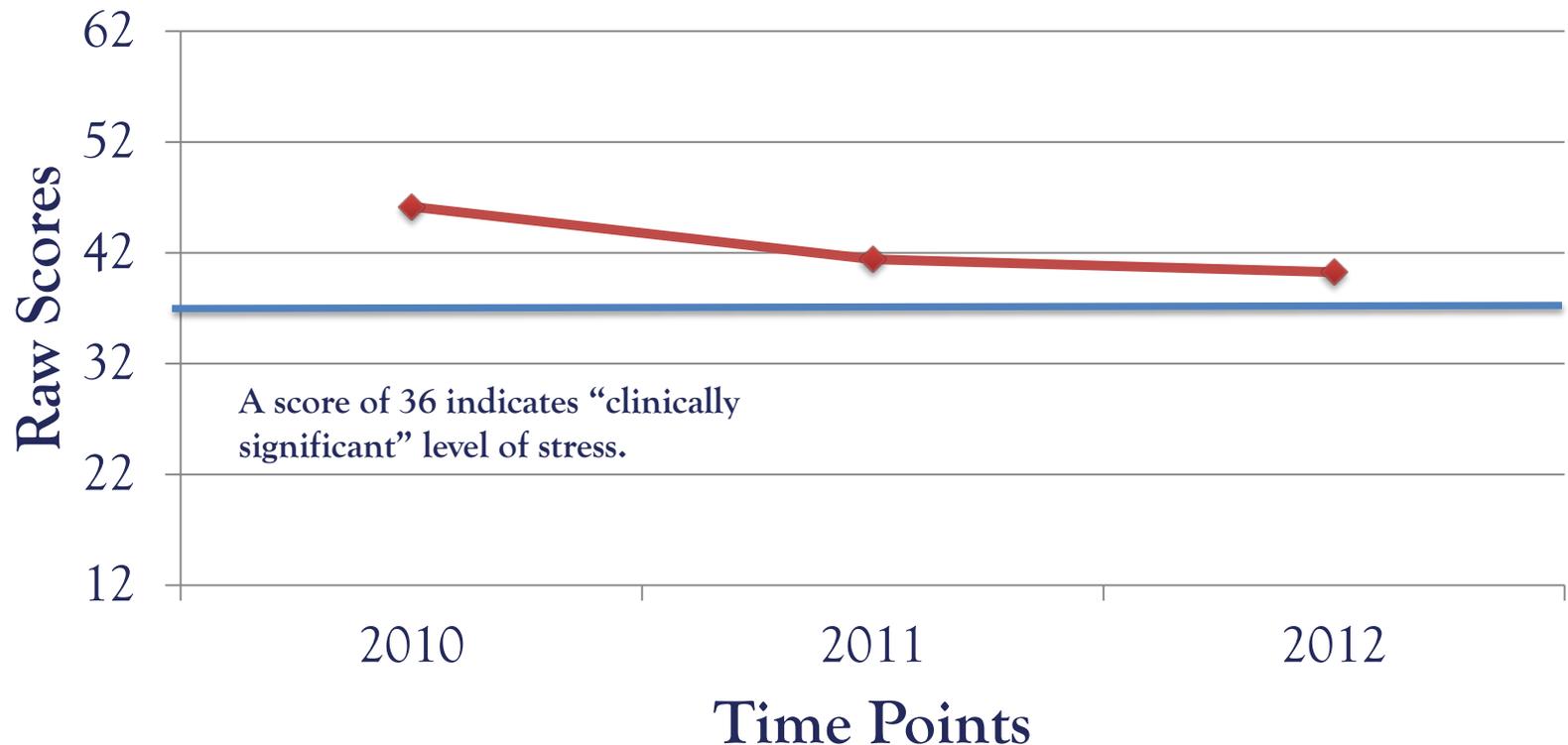
## Total Stress



N = 12

# Results: Parenting Stress Over Time

## Difficult Child



N = 12

# Correlations

- Discovering relationships among variables
- Several 2012 APM assessments were correlated
  - All categories and sub-domains
  - Some correlations yet to be explored (e.g. Vineland with GARS)
- Total of **628** possible combinations of variables to correlate!

# Correlations

What's meaningful?

- Some significant findings likely due to chance
- Some significant findings describe faulty relationships
  - e.g. lower spelling scores were significantly correlated with higher aggressive/destructive behaviors ( $r = -0.54^*$ )

# General Correlation Findings

- Behaviors rated by the Behavior Consultant (BC) often correlated with different behaviors rated by the Special Education Teacher
- Behaviors rated by the parent on one measure did not tend to correlate with parent ratings on other measures
- Most significant and strongest correlations were between BC ratings of challenging behaviors and Teacher ratings of adaptive skills

# Results: BPI Correlations

Challenging behaviors were negatively correlated with several adaptive skills:

	Variable	Self-Injurious (Frequency)	Self-Injurious (Severity)	Stereotyped Behavior (Frequency)
Vineland-II	Adaptive Behavior Composite	-0.42***	-0.23*	-0.32**
	Interpersonal Skills	-0.45***	-0.32**	-0.22*
	Play and Leisure Skills	-0.45***	-0.35**	-0.33**
	Coping Skills	-0.43***	-0.32**	-0.25*
	Socialization Domain	-0.51***	-0.40***	-0.29**
GARS	Autism Index	---	---	0.57***

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

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# Results: Parenting Stress Correlations

Lower levels of parenting stress were correlated with:

- 1) higher levels of children's' adaptive behavior skills
- 2) lower severity of aggressive destructive behaviors.

	Parental Distress	Total Stress
Domestic Skills (Parent)	-0.52**	
Interpersonal Skills (Parent)		-0.47*
Play and Leisure (Teacher)		-0.44*
Coping Skills (Teacher)	-0.49**	-0.42*
Socialization Skills (Teacher)	-0.41*	
Aggressive/Destructive Behavior Severity (Parent)	0.40*	

\* $p < .05$ , \*\* $p < .01$

# Discussion

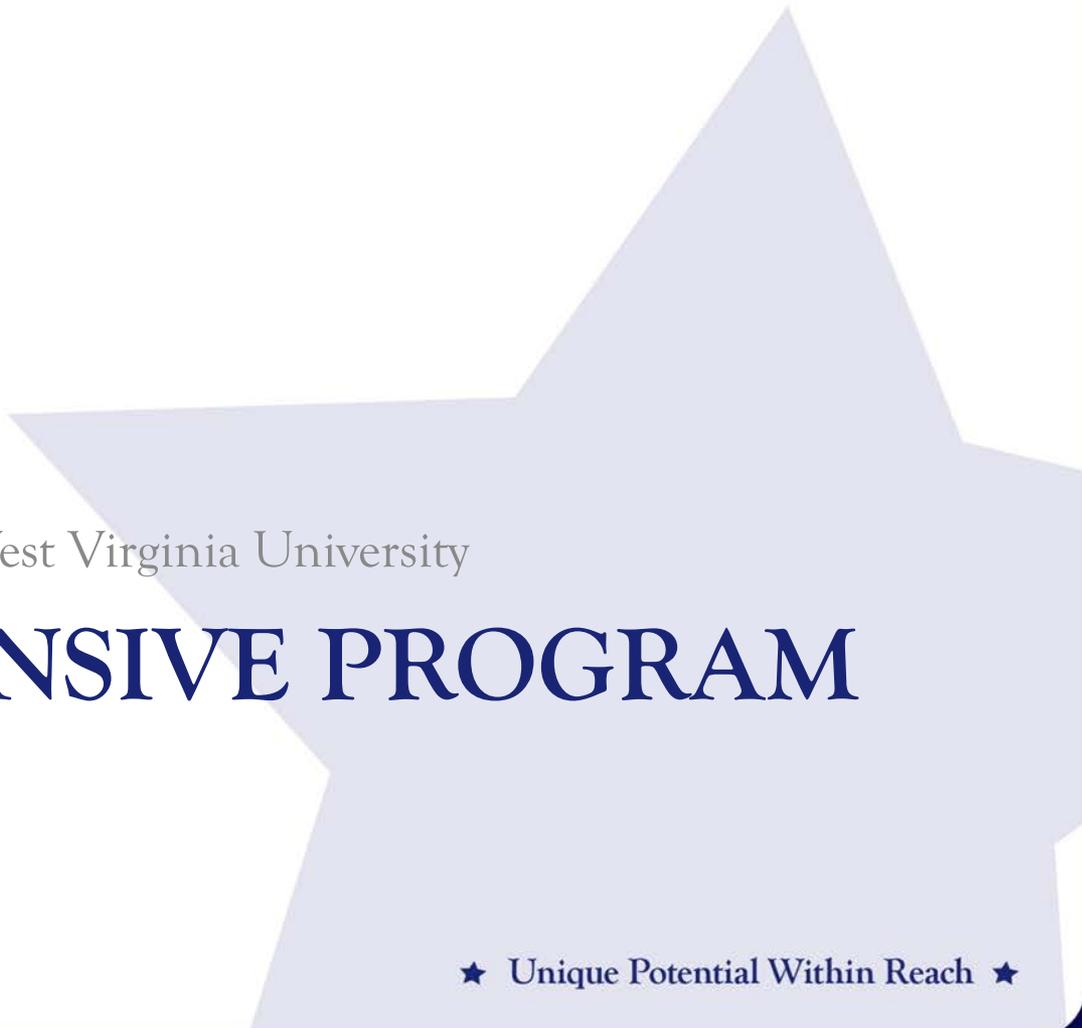
- Significant increases after two years of Vista CLM-based intervention across measured adaptive skills
  - Adaptive Behavior Composite
  - Socialization skills (including play, leisure, and interpersonal sub-domains)
  - Daily living (personal and school)
- Significant decrease in symptoms of autism (GARS)
- Significant increase in communication competencies (PLS)
  - Expressive and receptive skills

# Discussion

- Significant decrease in parenting stress scores across three years (2010-2012)
- Lower levels of parenting stress were correlated with:
  - 1) higher levels of children's' adaptive behavior skills
  - 2) lower severity of aggressive destructive behaviors.
- Challenging behaviors were negatively correlated with several adaptive skills (including interpersonal, play and leisure, and coping skills)

# Considerations & Limitations

- No comparison group – are children receiving treatment as usual or no treatment fairing better or worse?
- Use of standardized scores (decrease/no change in scores does not indicate a *loss* of skills)
- Use of raw scores with PLS and BPI
- Use (even limited) of rating scales: some results show decrease (parent measures)



Vista's Collaboration with West Virginia University

# COMPREHENSIVE PROGRAM ANALYSIS

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# Pathway Analysis

- What are the CLM assumptions?
- What are the CLM short-term outcomes?
- What are the CLM intermediate outcomes?
- What are the CLM ultimate outcomes?

# CLM Impact

What is the impact, and magnitude of the impact, of the CLM on the development of Children with Autism Spectrum Disorders at Vista School?

# Assessment of CLM Clinical Significance

- What is the degree of satisfaction with:
  - 1) CLM educational outcomes (7R)?
  - 2) CLM coaching?
  - 3) CLM training, materials, and procedures?
- How has the exposure to the CLM curriculum changed the students' and families' lives, skills, and knowledge?
- What is the experience with CLM CLRA at The Vista School?

# Thank You!

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