Transition Plan for ASD children from preschool to kindergarten.

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Abstract:

A systematic survey of quantitative assessments of preschool children with autism spectrum is presented as representing their identity as an independent culture with a right to live in the mainstream world, accepted as they are. This calls for an assessment of social, communicative and locomotion motor skills and the minimal comprehension and cognitive skills needed to inhabit this world with the minimal accommodations. Stakeholders in a transition and the mainstream IEP are identified with a cautionary note on the inadequacies of a curricular approach in IEP, in lieu of alternative schooling. Holistic approaches from the Himalayan viewpoint, and other viewpoints of informal Catholic, Islamic, Judaist, Buddhist, Vedic and other major theologies are presented for alternative schooling as a transition strategy.

Keywords: Alternative schooling, transition strategy, stakeholders, quantitative methods.

Introduction.

A formal curricular education from preschool, marks a learning path termed s-coolie or scoolie by the author, denoting a life long trajectory of learning and transition for normal and autistic individuals. While more normal scoolies, end up in a technological slavery, they end up in 30 year bondages to mortgages and automotive financing, and increased materialism, with the American Dream of success defined in a high paying career and a two garage home, with two or more automobiles, taking decades to own.

With this mindset, expectations are set for a preschool autistic child with this definition of

materialism, as a definition of success. A definition of drudgery and impossible targets, every autistic child would shy away from, but given the very high expectations of society, parents and the community, they remain forced in a transition to this learning path, a path, the author would hesitate in defining strategies for.

The main stakeholders

- Psychiatrist, occupational therapist, speech therapist
- Freeborn lobby representatives, child rights, unicef, free thinkers and alternative school representatives.
- Teaching community representatives, including every teacher involved.
- Social net for the child, in case he turns into an anarchist at such a young age.
- Building supervisor and maintenance staff.
- Fire rescue and ambulance service, paramedics.
- Building Principal(private communication)
- Martial arts instructor.
- Native American Spokesman.
- Senator and local government representative.
- Investor for baby bonds and “Child as Investment,” “investing in the future today”, for the child's protection.
- Insurance agent, you are in “good hands”.

Quantitative factors needed by the stakeholders in readiness evaluation.

The need for special education and interventions in a successful transition of ASD students to school from preschool programs, needs an evaluation of school readiness, a transition from the informal to a curricular training.

Literature, such as, Marsh A[1], indicates quantitative criteria for readiness based on published literature.

Out of 238 papers on the Google Scholar and Pubmed databases, inclusion criteria were readiness in transition and parental and teacher expectations, a total of

Four papers on readiness and four on teachers and parents expectations were shortlisted after abstract and data of full text analysis from 28 papers are presented.

Fig 1: PRISMA Diagram for a systematic survey on readiness and expectations, and strategies for transitioning from preschool to curricular kindergarten.

In Crane[2], the measurements used are, DECA and ELAP, (SRUSS), ESI-K, DIBELS, SAT-10, Klubnik, Murphy[3] use Stanford-Binet Intelligence Scales, Fifth Edition (SB5; Roid, 2003), Childhood Autism Rating Scale, Second Edition (CARS-2; Schopler, Van Bourgondien, Wellman, and Love, 2010), Vineland Adaptive Behaviour Scale, Bracken Basic Concept Scale Third Edition: Receptive (Bracken, 2006)

Matthews[4] (2014) use Background information; History of child care; Friendship quality; School readiness - parent report of social-emotional and self-help school readiness; Theory of Mind (ToM Developmental Scale (Wellman et al, 20016; Wellman and Liu, 2004); Appearance-reality (Wellman and Liu, 2004); Second-order false belief (Tager-Flusberg and Sullivan, 1994); School readiness - Cognitive/motor (Cognitive: Concept tasks; Cognitive: Language tasks; Motor tasks); Verbal ability [Peabody Picture Vocabulary Test-III (Dunn and Dunn, 1997)]

Waddington and Reed[5] (2009) use Gilliam Autism Rating Scale (GARS; Gilliam, 1995), Vineland Adaptive Behavior Scale, Mainstreaming Social Skills Questionnaire (MSSQ: Salend and Lutz, 1984), Strengths and Difficulties Questionnaire (SDQ: Goodman, 1987).

The anti-ABA Lobby.¹

The middle ground adopted by the author is the right of neurodiversity and distancing the neurotypical, assessments indicate strengths, which spectrum children adopt, a weakness could be viewed a strength and a strength a weakness, while essential communication, locomotion and cognition in a preschool child can be gauged by the quantitative methods described below, the need for transitioning is outdated by technological advancements.

Open BCI is a EEG based BCI cap^{2 2-4} that allows for communication and complete self sufficiency for an neurodiverse or neurotypical child, many other solutions outdate the need for IEP or a transition program, with digital literacy through MooC based courses and flip learning with videos and images emphasised.

Technology provides synesthesia aids, wearables to augment life and rich AR and SAR technology, providing adaptations and accommodations to fulfil one basic right of the neurodiverse to live in both worlds, the creative hidden world, they so much protect from the mainstream and the world of the neurotypical.

The Addendum includes a Table reproduced from (Crane[2]), a survey on readiness studies, with the results obtained.

Transition Strategy.

The need for the minimal learned skills of spoken language and mobility, and learning and cognition skills calls for acquisition of these basic skills for the recognition of autism as an independent culture implementing the right for spectrum patients to successfully live in the mainstream. While several alternative schooling strategies are more applicable to the target autism audience, there are so many constraints to curricular education of space and time which make the transition challenging and near impossible. Space constraints and attention span constraints make a transition nearly impossible for most students needing special schools and spectrum specific schooling in informal education. The limited cognitive and communication capabilities, would require the increased use of technological accommodation, requiring alternative schooling.

A drastic measure of legal residential schooling for spectrum students, could lead to stolen childhoods in special schools, isolated from the social community and reared like pedigree guard dogs, brainwashed in ideologies and approaches could be a dark scenario depicting the state of formal education.

In the continued insistence on a formal curriculum and a strategy for transition, much like requiring the University of Minnesota Gopher to attend classes and transition successfully, the timeless stick and carrot approach, ABA and reinforcement learning coupled with corporeal

punishment may be reintroduced. Reinforcements are set in didactic pedagogies, while teachers use subversion, dominance on innocent spectrum patients, who fail to grasp any need for the transition, often leading to high dropout rates and disappointment. Even the successful land in tainted vocational careers, rarely succeeding in self employment or a professional setting unlike students with alternative schooling based on Metta⁵ and formulations of Earth friendly education⁶ based on timeless spirituality of universal unconditional love,⁷ as preached in the Catholic, Islam, Buddhist, Judaist and Vedic spiritualities. It remains to be seen if students from these alternative schooling would contribute to the mainstream, where natural education fills all those voids in the education and transitioning of spectrum students.

Conclusions and future work.

Quantitative methods are introduced for the minimal skills needed, as formal or informal education and strategies for a transition to curricular schooling is compared to a transition to alternative schooling. The pitfalls of the inadequacy of curricular education are explored in the unnecessary bondage to technology rather than an emphasis of synergy and design. The resultant scoolies are part of a life of investment instruments, with a financial security tied to stakeholders, from the insurance and inventor lobbies, along with the poorly paid teaching lobby. It is thus emphasized, that given the choices, and leveraging the strengths, of the child, the learning path of maturity and a well rounded education is more outdoors and in alternative schooling with droids⁸ rather than the programmed robotics of curricular practice. The freedom of the meadow and the entomology stands taller than a sentence in a classroom.

Addendum:

Table 1

Summary of studies examining school transition for children with autism spectrum

disorder Author (yr) Country Sample Intervention Measures Findings

School readiness	United States	disabilities	received special	
	91 children with		education	
	ASD;		services	
	1338 children with			(DECA; LeBuffe
Crane[14] (2010)	ASD and other	Children		and Naglieri,

1999); (LAP-D;	scales than all	Concept Scale Third	children, M = 5.35	Language tasks;
Nehring,	groups except the	Edition: Receptive	yr (4-6 yr)	Motor tasks); Verbal
Nehring, Bruni and	developmental delay	(Bracken, 2006)	Background	ability
Randolph, 1992),	group	Receptive	information;	Children with ASD,
Early	Klubnik, Murphy,	understanding of	History of child	experiencing
Learning	Campbell, Reed and	self-/social	care; Friendship	centre-based care
Accomplishment	Warner	awareness	quality; School	was not
Profile (ELAP;	Metzger[15] (2014)	concepts was	readiness - parent	associated with
Glover,	United States	significantly lower	report of	cognitive/motor
Preminger and	Exp group: 76	for the	social-emotional and	school
Sanford, 2002),	children with ID and ASD/ID group.		self-help	readiness,
(SRUSS), ESI-K,	ASD, M = 53.60 mo.	ASD/ID group had	school readiness;	social-emotional
DIBELS,	Comp Group: 47	significantly higher	Theory of Mind	school
SAT-10	children with ID, M	school readiness	(ToM	readiness, or level of
	= 59.25 mo	scores than the ID	Developmental	self-help school
	Standford-Binet	group. The	Scale (Wellman et	readiness.
	Intelligence	ASD/ID group's the	al, 20016;	Children with ASD
Children with ASD	Scales, Fifth	School	Wellman and Liu,	who
(and	Edition (SB5; Roid,	Readiness	2004);	demonstrated more
developmental delay	2003),	Composite was	Appearance-reali ty	advanced ToM
group) showed the	Childhood	greater than	(Wellman and Liu,	performance had
slowest gains over	Autism Rating	their	2004);	higher
time in the language,	Scale, Second	Self/Social-Awa	Second-order false	cognitive/motor
cognitive and fine	Edition	reness subtest	belief	school readiness and
motor	(CARS-2;	Matthews[16]	(Targer-Flusberg	levels of self-help
domains.	Schopler, Van	(2014)	and Sullivan,	school readiness.
Children with ASD	Bourgondien,	United States	1994); School	Both groups,
had	Wellman, and	Exp: 63	readiness -	children with more
significantly lower	Love, 2010),	children with a	Cognitive/motor	positive
scores on the	Vineland	parent-reported	(Cognitive:	friendship
initiative,	Adaptive	diagnosis of ASD,	Concept tasks;	quality had
self-control and	Behaviour Scale,	M = 5.16 yr (4-6 yr).	Cognitive:	higher levels of
attachment	Bracken Basic	Comp Group: 33 TD		

Waddington and Reed[17] (2009) (Study 2)	children with ASD, Baseline, M = 6.7 yr (4.3-10.5 yr), Comp Group (Treatment as usual (TAU)): 15 children with ASD, Baseline, M = 9.1 yr (5.2-15.0 yr)	inclusion in a mainstream kindergarten; based on ABA; 5 skill areas: Academic literacy, communication, listening, speaking, social self-managemen t, school self-sufficiency, community, physical/motor. Individualised. Teaching takes place 1:1 or small groups	[Peabody Picture Difficulties Vocabulary Questionnaire (SDQ: Goodman, 1987) and Gilliam Autism Rating Scale (GARS; Gilliam, 1995), Vineland Adaptive Behavior Scale, Mainstreaming Social Skills Questionnaire (MSSQ: Salend and Lutz, 1984), Strengths and	socialisation, and daily living skills (not compared with social-emotional comparison group just significant improvements within group) with these skills continuing at mainstream school attending mainstream schools demonstrated improvements in communication,
	United Kingdom Exp group (PIRKS): 12	PIRKS prepare children for		

Parents'/teachers' views/experiences of school transition process

Beamish, Bryer and Klieve[18] (2014)	practices online survey: 36	Themes: Child visit, Parent information, Teacher sharing, Placement identification, Decision support, Sending teacher,	Support identification, Evaluation administrator, Visit support, Peer preparation All 36 practices highly endorsed
Australia 91 intervention and advisory (specialised preschool) teachers Transition	practices items identified from review of literature (including Forest et al, 2004).	Forest et al, 2004. Themes: Timing for planning and	preparation; Sharing information with family;
Denkyirah and MAgbeke[2] (2010)	preschool teachers. Comp group: 82	teachers from Ghana Survey developed from	
United States Exp group: 306	preschool		

Discussing placement with family; Helping families find school and community resources; Preparing and receiving school and teachers; Relationships between sending and receiving schools; Assistive technology; Home visit; Parent taring All themes endorsed by teachers in both countries Fontil and Petrakos[4] (2015) United States Parents of 10 children (aged 53.8-87.4 mo) with or suspected of having	ASD Interview questions adapted from Kindergarten Transition Parent Interview - Preschool (Pianta and Kraft-Sayre, 2003). Themes: child's experiences at school, their peer contact, their activities at home, and parents' personal activities with the school. Measure of Processes of Care (MPOC-20; King, King and Rosenbaum, 2004) Empathy, Caring, and Understanding: Relationships with	preschool teachers more positive than with kindergarten teachers. Knowledge and Expertise: More sharing of information with parents at preschool than school. Less educational opportunities and resources at school than preschool Quintero and McIntyre[1] (2011) United States Exp group: Parents and teachers of 19 children with ASD (M = 58.84 mo). Comp group: Parents and teachers of 76 children with	Developmental Difficulties, M = 58.66 mo Time 1 - end of preschool; Parents: Family Experiences and Involvement in Transition (FEIT; McIntyre et al, 2007); Preschool teachers: Teachers' Perceptions on Transition (TPOT), Open Ended Questions in TPOT. Time 2 - kindergarten entry; Parents: Family Experiences and Involvement in Transition (FEIT; McIntyre et al, 2007) Teachers' Perceptions on Transition:	Teachers significantly more likely to report higher concerns (some, many, or very many concerns) for children with ASD than children with DD. Teachers endorsed visiting students' assigned kindergarten classroom more for children in the ASD group than the DD group. Parent Involvement: Parents of DD group reported participating in a transition planning meeting significantly more than parents in the ASD group. Parents of DD group reported to have received written
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communication
regarding the
transition from
the kindergarten
program
significantly
more than
parents in the
ASD group

Protective and risk
factors in first year

of school				
Charman et al [19]	Berument et al,	communication	parent per child	predicted poor STR
(2004)	1999),	subscale the scores	Demographics,	and was not
United	Autism	did	ADOS,	moderate by
Kingdom	Treatment	significantly reduce	abbreviated	cognitive
Cohort 1: 73 children	Evaluation	over	WPPSI-II,	abilities.
with ASD, Cohort 2:	Checklist	time. The best	Student-Teacher	Jahromi, Bryce and
52 children	(ATEC; Rimland and	developmental	Relationship	Swanson [20]
with ASD; Baseline	Edelson,	progress was made	Scale (STRS; Pianta,	(2013)
both cohorts M =	1999)	by	2001),	United States
56.6 mo	Group made more	children with better	Caregiver-Teacher	Exp group: 20
Vineland	rapid	communication skills	Report Form and	children with
Adaptive	development	at the	Teacher	HFASD, M = 58.95
Behavior	progress in the 11	outset	Report Form (CTRF	mo.
Scales-Screen	mo in school than	Esienhower,	and TRF; Achebach	Comp group: 20
Version	they had preschool.	Blacher and	and Rescoria, 2000,	typically developing
(VABS-S;	Pattern of	Bush [12] (2015)	2001)	children, M = 50.20
Sparrows, 2000),	change on the ATEC	United States	High	mo
Social	was	166 children with	externalising	Measures:
Communication	mixed. On the social,	ASD (M = 5 yr 8	behaviour	Preschool
Questionnaire (SQC;	language and	mo, 4-7 yr) and one		Language Scale 4

(PLS-4;	Social	Diamond,	typically	Executive
Zimmerman,	Communication	1994), Behavior	developing	function
Steiner, and	Questionnaire (SCQ;	Rating Inventory of	peers.	emerged as the
Pond, 2002),	Rutter et al, 2003),	Executive	Behavioural	significant
Differential	Emotion	Function-Prescho	engagement: children	predictor of
Abilities Scale II	Regulation	Children with HFA	with HFA had	emotional
(DAS-II; Elliot,	Checklist (ER	were rated	significantly less	school
2007), Autism	Checklist;	significantly lower in	cooperative and	engagement. For
Diagnostic	Shields and	emotion	independent	children with HFA,
Interview-Revise d	Cicchetti, 1997),	regulation and	participation.	effortful control
(ADI-R; Lord et al,	Day/Night Task	effortful control than	Emotional	promoted
1994),	(Gerstadt, Hong, and	their	engagement:	
			ol Version	Hershey, and
			(BRIEF-P;	Fisher, 2001),
			Gioia, Isquith,	School Liking
			Guy, and	and Avoidance
			Kenworthy,	Questionnaire
			2000),	(Ladd et al,
			Parent-child	2000),
			joint engagement	parent-report
			states and	version of the
			child-initiated	Teacher Rating
			joint engagement	Scale of School
			(Bakeman and	Adjustment
			Adamson, 1984),	(Buhs and Ladd,
			Child Behavior	2001), Child
			Questionnaire-S	Behavior Scale
			hort Form	greater
			(CBQ-SF;	prosocial
			Putnam and	behaviour with
			Rothbart, 2006;	peers
			Rothbart, Ahadi,	

	85.75 mo; 18 children with Down Syndrome, M = 85.75 mo, teacher or assistant per child ($n = 32$). Comp group: 128 TD children (classmates), M = 78.54 mo	(CBS; Ladd and Profilet, 1996)	with Down Syndrome and their TD classmates. Teachers' reported significantly higher conflict scores and significantly lower closeness scores for children with ASD than their TD peers
Prino, Pasta, Giovanna, Gastaldi and Longobardi[23] (2016)		Student-Teacher Relationship Scale (STRS; Pianta, 2001)	
Italy Exp group: 14 children with ASD, M =		No difference between teachers' perceptions of children	
Sparapani <i>et al</i> [21] (2016)	Vocabulary Test - 4th Ed (PPVT-4; Dunn and Dunn, 2007), Expressive One Word Vocabulary Picture Test - 4th Ed (EOWVPT-4; Brownwell, 2000), Social Skills Rating	system (SSRS; Gresham and Elliott, 1990), Teacher Report Form (TRF; Achenbach and Rescorla, 2001), 60-min classroom observations. Five themes: Emotional Regulation, Classroom	No difference between children in general education and special education classes. Students spent less than 50% of time in a directed well-regulated state, productively and independently
United States 196 children with ASD, M = 6.36 yr ADOS, Stanford-Binet Intelligence Scale - 5th Ed (SB-5; Roid, 2003), Peabody Picture			participating in classroom activities. Students only responded to half of verbal bids for interaction, infrequently rarely used generative language

Grindle et al[10] (2012)	range 54 to 72 mo (M = 63.89 mo)	based on the United Kingdom Participation, Social Connectedness, Initiating Communication, and Flexibility	Positive changes were observed for the majority of children enrolled in the ABA class - moderate to large-sized effects found for standardized test outcomes after 1 yr of intervention. Outcomes for ABA class were positive compared with the treatment as usual	(2015)	shares; (2) Comments about one's own play; (3) Comments about others' play; (4) Niceties, <i>e.g.</i> , please, thank-you; and (5) play
	School-based comprehensive behavioural intervention features: (1) Parents generalize skills at home; (2) One-to-one intervention at desks in a shared classroom; (3) Education for a maximum of 6 h per day for 38 wk of year; (4) Matched school timetable; (5) Generalise skills to mainstream classes; and (6)	IQ: Stanford-Binet Intelligence Scale -Fourth Edition or Leiter International Performance Scale-Revised; Vineland Adaptive Behavior Scale-Survey Form (VABS); ABLLS/ABLLS R assesses skills such as effective social and communicative functioning, imitation, and cooperation	majority of children enrolled in the ABA class - moderate to large-sized effects found for standardized test outcomes after 1 yr of intervention. Outcomes for ABA class were positive compared with the treatment as usual	United States	Comments about others' play; (4) Niceties, <i>e.g.</i> , please, thank-you; and (5) play
	United Kingdom, 4-5 yr	Exp group	majority of children enrolled in the ABA class - moderate to large-sized effects found for standardized test outcomes after 1 yr of intervention. Outcomes for ABA class were positive compared with the treatment as usual	Exp group (Peer Networks Intervention): 56 children with ASD, baseline: Age M = 5.8 yr.	organizers, <i>e.g.</i> , to give ideas about setting up games and rules
	Age range 43 to 68 mo (M = 58.2 mo).	Comp group	majority of children enrolled in the ABA class - moderate to large-sized effects found for standardized test outcomes after 1 yr of intervention. Outcomes for ABA class were positive compared with the treatment as usual	Comp group (EAU): 39 children with ASD baseline: Age M = 5.8 yr	Dependent measures from direct observations consisted Clinical Evaluation of Language Fundamentals-4, Core Language Scores (CELF-4; Semel et al 2003); the Vineland
	[Education as usual (EAU)]: 18 children with ASD baseline: Age	Exp group	majority of children enrolled in the ABA class - moderate to large-sized effects found for standardized test outcomes after 1 yr of intervention. Outcomes for ABA class were positive compared with the treatment as usual	Exp group (Peer Networks Intervention): 56 children with ASD, baseline: Age M = 5.8 yr	Dependent measures from direct observations consisted Clinical Evaluation of Language Fundamentals-4, Core Language Scores (CELF-4; Semel et al 2003); the Vineland
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Kamps et al[11]					

Adaptive group					
Behaviour Scale	participants.				
Teacher	Standard scores		Modest		
Report-Communi	for language		increases in		
cation subtest	performance and		global cognitive		
(VABS; Sparrow	communication		ability scores.		
et al 2006); and	(teacher report),	192 children with ADOS,	Negligible		
teacher ratings of	and teachers	ASD, M = 6.1 yr	Differential		
classroom social	ratings of peer	(5-8 yr), grades	Ability		
behaviours [The	network	Kindergarten to	Scales-Second		
Teacher	participants	second	Edition (DAS-II;	McKeating[28]	
Impression Scale	social		Elliott, 2009),	(2014)	
(TIS); Odom and	communication		Adaptive	United States	sample)
McConnell,	behaviours		Behavior	Exp group: 39	Children
1997]	greater for peer		Assessment	children with	received
			System-Second	ASD, M = 6.21	Itinerant,
			Ed (ABAS-ii;	yr (5-7 yr).	supplemental or
		Strategies for	Harrison and	Comp Group: 39	full-time special
		Teaching based	Oakland, 2003),	children	education
Peer		on Autism	Pervasive	with other	services
intervention		Research	Developmental	disabilities, M =	Inclusive
group improved	Locke et al[26]	(STAR), which	Disorder	6.26 yr (5-8 yr)	Classroom
more in	(2014)	incorporates	Behavior	(Footnote: 73	Profile (ICP;
initiations to		discrete trial	Inventory	teachers of	Soukakou, 2010),
peers during		training (DDT,	(PDDBI; Cohen	children in	Autism
non-treatment		Smith 2001,	and Sudhalter,		Evaluation
social probes and		from ABA),	2005)-Teacher		Treatment
during		pivotal response	Form		Checklist
generalization		training (PRT;	intervention		(AETC; Rimland
probes in	United States	Koegel et al,	group than for		and Edelson,
natural settings		1989) and	comparison		1999), Teacher
than the		functional	group children		Perception
comparison		routines			Survey (TPS)
					Children
					receiving full

time special	(5-8 yr), grades	Disorder	changes in DAS	trained teachers.	
education	Kindergarten to	Behavior	scores. Higher	Curriculum	
services made	second	Inventory	social anxiety	addressed core	
substantially	Strategies for	(PDDBI; Cohen	symptoms and	deficits of	
greater progress	Teaching based	and Sudhalter,	increase in	children with	
in sociability and	on Autism	2005)-Teacher	student age	ASD using	
behaviour, but	Research	Form, Child	significantly	evidence-based	
not in	(STAR), which	Symptom	predicted a	strategies and	
communication,	incorporates	Inventory-4	decrease in	behaviour	
sensory or	discrete trial	(CSI-4; Gdaow	DAS scores	management	
cognitive	training (DDT,	and Sprafkin,	Sainato et al[27]	Leiter	
abilities, than	Smith 2001,	2002)	(2015)	International	
children	from ABA),	Modest mean	United States	Performance	
receiving	pivotal response	change in DAS	Exp group	Scale-Revised	
supplemental and	training (PRT;	GCA scores.	(Inclusive	(Leiter-R; Roid,	
itinerant services.	Koegel et al,	Several	kindergarten	and Miller,	
All children,	1989) and	measures of	program): 41	2002); Kaufman	
regardless of	functional	adaptive	children with	Test of	
placement	routines.	behaviour;	ASD, baseline:	Educational	
achieved higher	ADOS,	functional	Age M = 75.7	Achievement,	
sociability	Differential	academics,	mo. Comp	Second Edition	
scores at	Ability	health and	group (Eclectic	(KTEA-II;	Adaptive
post-test.	Scales-Second	safety,	intervention): 21	Kaufman and	Behavior
Teacher	Edition (DAS-II;	self-direction,	children	Kaufman, 2004);	Scales-Classroo
perceptions of	Elliott, 2009),	social skills, and	with ASD,	The Test of	m Edition
inclusion	Adaptive	the overall	baseline: Age M	Language	(Sparrow, Balla,
predicted higher	Behavior	adaptive	= 74.1 mo	Development	and Cicchetti,
ATEC scores	Assessment	composite	Experimental	(TOLD-P: 3;	1985)
Pellecchia <i>et</i>	System-Second	predicted	group	Newcomer and	Experimental
<i>al</i> [25] (2016)	Ed (ABAS-ii;	changes in DAS	participated in	Hammill, 1997);	group made
United States	Harrison and	scores. Social	general	Vineland	significant gains
152 children with	Oakland, 2003),	anxiety	education		in nonverbal
ASD, M = 6.0 yr	Pervasive	symptoms	classroom		intelligence,
	Developmental	predicted	taught by		academic

achievement, and Behavior		Basics', a CAI	group used	(Brigance, 2004),	Additionally,
language scores	Scales-Classroom	program that	TeachTown:	Childhood	students who
compared with	m Edition	includes	Basics for	Autism Rating	used
comparison	(Sparrow et al,	computer	approximately 20	Scale (CARS),	TeachTown:
group.	1985)	lessons and	min a day on	Ongoing	Basics
Comparison	Whalen <i>et al</i> [24]	natural	school days	Automatic Data	demonstrated
group exhibited	(2010)	environment	over three	Collection	significant
either no	United States	activities	months	(TeachTown:	progress overall
improvement or	Exp group	(Connection	Peabody Picture	Basics)	in the software
decreases. Both	(preschool and	Activities) for	Vocabulary Test,	Children in the	and those
model and	K-1 students): 22	developmental	3rd Edition	TeachTown:	students who
comparison	children with	ages 2-7 yr. The	(PPVT; Dunn	Basics group	used the
groups	ASD,	student is taught	and Dunn),	performed	program for more
demonstrated	range 3 to 6 yr.	in a discrete	Expressive	better across all	time
similar	Comp group	trial format	Vocabulary Test	language and	demonstrated
improvement in	(preschool and	where they	(EVT, Williams,	cognitive	larger gains
pre- and	K-1 students): 25	receive	1997), The	outcome	within the
post-test	children with	reinforcement for	Brigance	measures than the	software and in
outcomes on the	ASD,	correct	Inventory of	children in the	outcome
Vineland	range 3 to 6 yr	responses.	Early	control	measures
Adaptive	TeachTown:	Treatment	Development	group.	

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1Footnote: Other research populations examined separately not reported in this systematic review. DECA: Devereux Early Childhood Assessment; LAP-D: Learning Accomplishment Profile-Diagnostic; SRUSS: School Readiness Uniform Screening System; ASD: Autism spectrum disorder.

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