

SEPARATELY EDUCATION NEEDS (ATE) BIG PRESCHOOL AGED CHILDREN'S TRAINING AND COGNITIVE ACTIVITY CONTROL TO DO ORGANIZATION TO GROW

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Abstract. Article big preschool children aged (5–7 years) separately education needs (speech) disorder, autism spectrum disorder, mental weakness, sensor (defects) into account received without training and cognitive activity systematic control to do modern to the methods dedicated to . In 2024–2025 3 of Uzbekistan 18 in the region (Tashkent , Samarkand , Fergana) preschool education conducted in the institution (n=248 children , of which ATE — 58) research results presented Control system following components own inside takes : (1) many step by step screening ; (2) individual development trajectory ; (3) digital monitoring platform “ Cognitive Tracker ”; (4) interactive correction programs . Research As a result, ATE in children attention concentration 35%, problem solution skills 29%, literacy 41% increase in readiness Scientific news — Uzbekistan to the conditions customized “ Cognitive Tracker” mobile app and educator 4 stages for control protocol . Practical importance — inclusive In MTTs study process 48% more efficient organization to grow opportunity .

Key words: separately education needs, big preschool young, educational activity, cognitive development, individual monitoring, inclusion education, digital tools, correction pedagogy .

1. Introduction

Modern education policy every one child's individual development to the needs suitable approach demand does (Uzbekistan) Republic The President's “Preschool” education system by 2030 development ” Resolution No. PF-6079 , 2020). Large preschool young — to school preparation solution doer period is , this ATE children in the stage cognitive and training in the activity delays next in study difficulties (dyslexia , dyscalculia , social adaptation (destruction) comes (American Academy of Pediatrics , 2022).

ATE children in Uzbekistan number official 9.7 % respectively organization (Health) storage Ministry of Education , 2024). However , preschool in institutions control system mainly visual observation and subjective to evaluate based objective, dynamic monitoring tools are not enough . Article The goal is to help children with ATE training and cognitive activity control to do scientific based , practical model working exit and from the test transfer.

2. Theoretical basics and literature analysis

2.1. Cognitive development theories

- **J. Piaget:** Pre- operational stage (5–7 years old) — symbolic thinking, classifying , serializing skills formation .
- **L. S. Vygotsky :** Near development zone (ZPD) — large help with potential development .



- **A.R. Luria** : Neuropsychological analysis - attention , memory , execution provider of functions systematic violation .

2.2. ATE and his/her impact

ATE classification (ICD-11):

- Speech and language disorders (F80) — 38%
- Autism spectrum violation (6A02) — 22%
- Mental development delay (6A00) — 25%
- Sensory impairments (vision / hearing) — 15%

ATE in children cognitive indicators will be 1.5–2 times lower (Feldman, 2021).

2.3. International experience

Country	Model	Features
Great Britain	EYFS Framework + SEND Code	Every 6 months Progress Check
Australia	WEYLDF + Inclusion Support	Individual Learning Plan (ILP)
South Korea	Light Curriculum	AI- based monitoring (KidApt)

In Uzbekistan there is Studies (Usmonova , 2023; Khojayev , 2024) of ATE diagnostics initial to the stages aimed at , but dynamic control system no .

3. Research methodology

3.1. Research design

- **Type** : Mixed (qualitative + quantitative), longitudinal (12 months).
- **Location** : Tashkent, Samarkand , Fergana regions , 18 MTTs.
- **Sample** : n=248 (ATE — 58, normative — 190).

3.2. Groups distribution

Group	Number	ATE type
Experimental (ATE)	58	Speech (22), Autism (13), Intellectual (14), Sensory (9)
Control	190	No ATE

3.3. Control tools

1. **Screening** :
 - Denver Developmental Screening Test II (in Uzbek adapted)
 - M-CHAT-R/F (autism screening)
2. **Cognitive assessment** :
 - WPPSI-IV (abbreviation): Vocabulary, Block Design, Picture Memory
 - Raven's Colored Progressive Matrices (adapted)



3. Training preparation :

- To school " preparation " national test (2023)

4. Digital Tool : “Cognitive Tracker” mobile app (Android/iOS, Uzbek / Russian) languages)

3.4. Control model

Stage 1: Screening (month 0) → ATE detection

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Stage 2: Individual Development Trajectory (IRT)

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Stage 3: Every 3 months Cognitive Profile (attention , memory , thinking)

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Stage 4: Intervention (ABA, PECS, TEACCH) + re-evaluation assessment

3.5. Statistics

- SPSS 27.0
- t- criterion , ANOVA, Repeated Measures ANOVA
- Reliability : Cronbach $\alpha > 0.85$

4. Research results

4.1. Initial assessment (month 0)

Indicator	ATE (M±SD)	Normative (M±SD)	t	p
Attention stability (min)	3.8±1.3	8.9±1.5	-18.2	<0.001
Short term memory (word)	2.9±0.8	6.1±1.1	-16.7	<0.001
The problem solution (points /15)	5.7±2.1	12.4±1.9	-17.1	<0.001
Literacy readiness (%)	38%	91%	$\chi^2=42.3$	<0.001

4.2. 12 months intervention results

Indicator	Before	Then	Growth (%)	p
Attention	3.8	5.9	+35%	<0.01
Memory	2.9	4.6	+37%	<0.01
The problem solution	5.7	8.1	+29%	<0.01
Literacy	38%	71%	+41%	<0.05

4.3. " Cognitive Tracker 's effectiveness

- Users : 72 educators + 58 parents
- Evaluation Time : 8 minutes (manual — 40 minutes)
- Information Accuracy : 94%



- Usage Satisfaction : 4.7/5 (Likert) scale)

5. Discussion

Results Vygotsky's ZPD theory confirms : systematic help with ATE children cognitive indicators noticeable increased . International from experience different (e.g. , Australian ILP) , our model family participation up to 62% “ Cognitive Tracker ” South Korea's KidApt to the platform It looks like it , but it's Uzbek. in the language and free .

Limitations :

- Research only city In MTTs was held .
- Far long-term (5 years) impact unstudied .
- Village in the regions internet limitation .

Future directions :

- AI- based prophetic analytics add
- Village To the MTTs offline mode .

6. Conclusion and practical recommendations

Scientific conclusion

ATE children study and cognitive activity control to do **systematic , individual, digital and interactive** to be 12 months old test results model high confirms its effectiveness (average + 35%) .

Practical recommendations

1. **Until 2026** all MTT has the “ Cognitive Tracker” app current to be
2. Every one garden shed **ATE- specialist** (defectologist / speech therapist) position .
3. Educators **every 80 hours a year** qualification increase (remote) courses).
4. To parents “**ATE- Family** ” manual and webinars .
5. State to the program “ **Inclusive Garden 2030** ” project input

Literature

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