

7th icCSBs
**The Annual International Conference on Cognitive-Social,
and Behavioural Sciences**

**TYOLOGICAL DIFFERENTIATION OF CHILDREN WITH
DEVELOPMENTAL DELAY OF SCHOOL ENTRY AGE**

Nataliya Babkina (a)*, Igor Korobeynikov (b)

*Corresponding author

(a) Institute of Special Education of Russian Academy of Education, Pogodinskaja str. 8/1, 119121 Moscow, Russia, natali.babkina@mail.ru

(b) Institute of Special Education of Russian Academy of Education, Pogodinskaja str. 8/1, 119121 Moscow, Russia, psikor@bk.ru

Abstract

The article discusses heterogeneity in a group of children with developmental delay (DD) resulting from the variety of etiological factors that cause this type of mental dysontogenesis. The wide range of DD expression varies starting from conditions close to the age norm up to the ones requiring contradistinction from intellectual disability, which makes it crucial to typologically differentiate the nosological group. The article presents a guideline, developed by the authors, for differentiating DD variants in children with DD around school entry based on the basic characteristics of mental development and behaviour of a child (i.t.) peculiarities of the cognitive activity, intellectual performance (self-regulation and goal-directed behaviour), communication during and out of learning activities and cognitive and motivational learning capacity. Three typological variants of DD were identified (A, B, C). A screening program for differentiated school readiness assessment of children with DD has been described. It has been experimentally proven that although having the same nosological diagnosis, children with DD show different typological variants of DD by school entry age depending on the etymology and expression of the delay and on whether children had or had not received preschool intervention services. Of 100 children between the ages of 7-8 affected by DD, the research has revealed a significant difference in the development of those children who had received preschool intervention services as opposed to those who hadn't ($p < 0.05$). The obtained diagnostic data make for a better understanding of the «psychological portrait» of children with DD and their learning needs.

© 2019 Published by Future Academy www.FutureAcademy.org.UK

Keywords: Children with Developmental Delay (DD), Typological Differentiation, Psychological Diagnostics, Inclusive Education.



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

In regards to the reformation of education for children with limited physical and mental health in its current stage, it is characteristic to mainstream integrative and inclusive learning to allow children with and without disabilities to learn together in the same public schools. The Federal State Educational Standard defines the curriculum and educational conditions for children with health limitations in Russia putting emphasis on heterogeneity in a group of children within each nosological category, which implies a differentiated approach to educational programs and various types of intervention support.

2. Problem Statement

Not only are children with DD the most frequent group compared to other categories of children with health limitations but also the most frequent in inclusive education (Babkina, 2017a). Moreover, the group of children with DD is characteristic of extreme heterogeneity conditioned by a significant variety of etiological factors causing this type of mental dysontogenesis. Organic and/or functional disorders of the central nervous system, constitutional factors, chronic somatic diseases, disadvantaged early care and childhood living conditions, psychic and social deprivation may occur among the causes of DD (Babkina, 2016b; Belopolskaya, 2013; Drobinskaya, 2006; Indenbaum, 2012; Korobeynikov, 2002; Korobeynikov & Indenbaum, 2009; Lubovsky, Korobeynikov & Valyavko, 2016; Markovskaya, 1993). All the above makes for a significant delay expression range – from conditions close to the age norms up to the conditions requiring contradistinction from intellectual disability.

Not only does the level of mental development of a child with DD around school-entry age depend on the nature and the expression of underlying disorder (generally due to organic causes) but also on the quality of the previous experience in terms of education and upbringing (Babkina, 2015; Dmitrieva, 2017). Whereas some of such children are able to learn together with typically developing children of their age, with minor yet mandatory intervention support and special teaching techniques being implemented, the others need consistent and integrated support on a regular basis throughout the learning process (including medical support) (Babkina, 2016a; Korobeynikov & Babkina, 2017a; Korobeynikov & Babkina, 2017b; Slepovich & Polyakov, 2008; Vilshanskaya, 2008).

Thus, heterogeneity in the group of children with DD requires typological differentiation within the given nosological group to be set. This allows for identification of the variants of DD in children at school entry and tailoring of a best-fit education for every child.

3. Research Questions

- What are the criteria and parameters that provide the basis for typological differentiation of children with DD required for tailoring an optimal educational path and creating special learning conditions?
- How does early intervention (support) received by a child with DD at preschool age affect which typological variant of DD the child falls into?

4. Purpose of the Study

The purpose of the study is to identify the basic criteria for the classification of DD types and develop a guideline for determining variants of DD in children of school entry age with DD proceeding from the basic developmental and behavioural characteristics of a child in terms of child psychology. The experimental field part of the study is aimed at the assessment of school readiness in children with DD and analysing the impact of early intervention received in preschool age.

5. Research Methods

A complex of basic research methods typical for psychology for special needs and special education was applied in the study:

- analysis of phenomenological expression of DD variants;
- method of analytical outlining the basic characteristics of mental development in order to typologically differentiate DD variants;
- comparative field experiment on school readiness in children with DD who had received preschool intervention services and in those who hadn't;
- quantitative and qualitative experimental data research;
- design of educational conditions as a method.

6. Findings

6.1. Identifying criteria for typological differentiation of children with DD

Developing a guideline for differentiating the DD types in children was backed by the outcomes of recent studies in clinical psychology and in psychology for special needs (including the authors' ones) that report on this type of psychic dysontogenesis to vary in range of DD expression in terms of cognitive and learning performance, social and emotional development and behaviour in children with DD (Babkina, 2015; Belopolskaya, 2013; Dmitrieva, 2017; Drobinskaya, 2006; Indenbaum, 2012; Korobeynikov & Indenbaum, 2009; Markovskaya, 1993).

First, a detailed phenomenological description on the studied group was conducted, including the most probable feature combination of DD and its expression (Babkina, 2015). Then, the common parametres («*basic features*») for the detailed description of child groups were identified. The phenomenon of impaired mental development and – to a considerable degree – the special educational needs in children showing signs and symptoms of dysontogenesis of this type were defined by certain parametres (i.e.) cognitive activity, intellectual performance (self-regulation and goal-directed behaviour), communication and learning capacity (Babkina, 2017b; Korobeynikov & Babkina, 2017b).

- *Cognitive activity* herein is considered as an assessment of a child's general intellectual development and traits of his/her cognitive activity.
- *Intellectual performance* is evaluated upon the characteristics of self-regulated and goal-directed behaviour and mental work capacity.

- *Communication* outlined as phenomenological characteristics is evaluated separately, in and out of the learning environment.
- *Learning capacity* is considered as both the original meaning indicating the «zone of proximal development» and as predictive validity - a major forecasting factor for speculation on the most appropriate educational conditions. Moreover, while learning capacity and learning quality are highly likely to be predominantly dependent on the intellectual factors in cases of more pronounced organic brain disorders, in cases of more moderate psychic dysontogenesis of DD type they tend to be mainly dependent on emotional and personal immaturity (given cognitive development within the age norm). Therefore, we consider it reasonable to evaluate separately the cognitive learning capacity and the motivational learning capacity.

6.2. Classification of children with DD with differentiated description of the groups

Based upon the generic characteristics of children's mental performance and their behavioural characteristics, three typological variants (types) were identified.

6.2.1. Typologic group A

Cognitive activity: the overall intellectual development is close to the age norms in terms of cognitive level and structure; cognitive activity is unstable, not exhibiting deep engagement and showing signs of cognitive discrimination.

Intellectual performance (self-regulation and goal-directed behaviour): motivational component of performance is unstable (loosening of self-control), fluctuations in goal-directed behaviour; given an adequate intrinsic motivation (interest) and extrinsic motivation mental work capacity is sufficient; low sensory capacity with a sensory overload state when performing relatively complicated tasks or activities.

Communication: despite a child's understanding of communication norms and rules in classroom settings and his/her being capable of coping with them, a non-consistent adherence to the rules is observed due to motivational and personal immaturity and lack of spontaneous self-regulation; out of the learning classroom setting, children exhibit skills of spontaneous and self-initiated - yet lacking in coherence and involvement - communication generated predominantly by emotional stimuli.

Learning capacity: cognitive learning capacity is sufficient for educational attainment in terms of common educational standards and requirements in a typical classroom setting with typically developing children of the same age within the common calendar time schedule; motivational learning capacity and the «zone of proximal development» of a child within this group is revealed and adjusted in the learning process.

6.2.2. Typologic group B

Cognitive activity: uneven cognitive profile, either within the range but close to the lower limit of the norm-reference range or below the low borderline; cognitive performance is reduced, selective and is lacking in involvement.

Intellectual performance (self-regulation and goal-directed behaviour): insufficient level of self-regulation, fluctuations in the motivational component along with the «organic» attention disorder

(defocused attention), deficit of intentional activity, with tendency towards affective activity disruption; poor and sporadic mental performance – due to unstable motivation paired with easy fatigability, low sensory capacity and cognitive difficulties.

Communication: given the potential ability to grasp norms and rules of communication in the classroom settings, acquisition and reproducing model communication patterns meets with difficulties and/or is unstable; out of the learning activities, initiative display and spontaneous actions within communication are restricted, predominantly reactive and non-functional along with poor means of communication and repertoire.

Learning capacity: cognitive and emotional learning capacity may vary, yet in general, it is limited; the «zone of proximal development» of a child within this group is to be specified and adjusted in the learning process.

6.2.3. Typologic group C

Cognitive activity: overall intellectual development in terms of its level and structure verges towards moderate mental retardation; the cognitive performance is reduced, situation and context dependent and rapidly dying away.

Intellectual performance (self-regulation and goal-directed behaviour): poor self-regulation and intentional activity; cognitive performance is reduced and fluctuating due to cognitive disorders, lack of motivation, attention disorder, inertness, easy fatigability and low sensory capacity.

Communication: pronounced difficulty in understanding rules and routines of communication and grasping them predominantly by nonadaptive following common communication rules often aside the context of situation; out of the learning environment, given the acute lack of coherence in verbal and non-verbal means during communication and decreased ability to understand the narratives and the context of interactions, the speech and behavioural performance of a child is either extremely limited or chaotic, out of control and incongruent with the aims of communication.

Learning capacity: the cognitive and motivational learning capacity is considerably limited; the «zone of proximal development» of a child within this group and special learning conditions for him/her are defined through diagnostic learning.

6.3. School readiness assessment in children with DD

The program for diagnostic screening test of school readiness in children with DD was developed. It contains 5 sections:

- Visual discrimination and spatial intelligence test.
- Test for sustained attention and self-regulation.
- Test for basic cognitive operations.
- General information and language development test.
- Learning and cognitive motivation test.

In the special education resource textbook (by Babkina, 2015) the detailed description of the diagnostic procedures and instructional sequence of methods applied are provided, with the assessment criteria for each method accordingly, text and stimulus materials, questionnaire forms and other documents

to fill out (the screening protocols and the psychoeducational evaluation report suggested by a psychologist etc.).

The screening was conducted in Moscow pre-kindergartens (Russia). The research included a sample of 100 preschool children of age 7 y.o. including a subsample of 30 preschoolers attending regular pre-kindergartens and a subsample of 70 preschoolers attending intervention programs (in pre-kindergartens for preschoolers with special needs or in groups for children with special needs in regular pre-kindergartens). The diagnosis «developmental delay» had been verified for all the children.

The major question of the study was how preschool intervention support or lack of it can affect what typological variant of DD a child at school entry age with DD may fall into and how close a child with DD can approach to the age developmental norms due this support.

A typological variant of DD of each child with DD included in the research was identified according to the results of the tests and screening diagnostic upon the basic developmental and behavioural characteristics of a child (Figure 01).

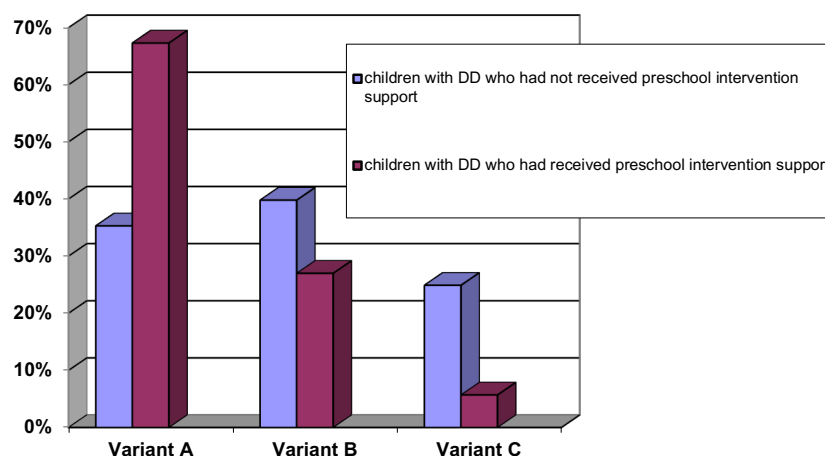


Figure 01. Typological variants of DD in children at school entry age

As the diagram shows, children with DD who had received preschool intervention support showed the most favourable variant of DD and consequently the higher level of school readiness. This suggests special upbringing and education conditions with special methods applied be crucial for these children. Not only are intervention support classes a way to prepare children with DD for entry into the school system but also one of the key factors in cognitive activity boosting and mental and personal development improvement. More details on the results of the experimental study can be found in our dissertation (Babkina, 2017b).

7. Conclusion

The study has proved that having the same nosological diagnosis children by the school entry age with DD exhibit different variants of DD depending on the etymology and expression of the delay and on whether children had or had not received preschool intervention services.

A typological variant of DD is determined by the basic characteristics of mental development and basic behavioural characteristics of a child identified through psychoeducational tests and medical screening, and serves as a guideline for tailoring an optimal educational path.

In regard to children with mild DD (*group A*), it is recommended that they learn in a typical classroom setting together with typically developing children of the same age within the common calendar time schedule (inclusive learning). A consistent and systematic psychoeducational support on a regular basis throughout the learning process is mandatory, which includes creating conditions for covering special learning needs, support in obtaining highly developed life-skills competencies and in acquisition of the basic educational program.

In regard to children with moderate DD (*group B*), it is recommended that they learn within prolonged calendar time schedule in a classroom setting with children of the same age who have common special learning needs. The educational program should have an enforced intervention support component, an integrated psychoeducational and medical help largely extended in terms of scope and content and increased focus on developing life-skills competencies.

In regard to children with severe DD (*group C*), it is recommended that they learn in a special diagnostic school setting for more reliable verification of their true learning capacity and ability to approach the age norms. It is mandatory to apply special teaching methods according to adapted educational programs that if necessary can be individually customized.

The results of the research make for a better understanding of the «psychological portrait» of a child by school entry age with DD and can aid adjustment and regulation of integrated clinical-psychoeducational diagnostic testing and monitoring of child development.

Acknowledgments

This research was conducted within the state-sponsored project by the Ministry of Education and Science of the Russian Federation through the Federal State Funded Research Institute of Special Education of Russian Academy of Education. The authors would like to thank Yulia Melnik for translating the article into English.

References

- Babkina, N. V. (2015). *Otsenka gotovnosti k shkolnomu obucheniyu detey s zaderzhkoy psikhicheskogo razvitiya* [Assessment of Readiness for Schooling Children with Developmental Delay]. Moscow: Shkolnaya Kniga.
- Babkina, N. V. (2016a). Osnovnye napravleniya i sodержanie korrektsionnoi raboty s mladshimi shkol'nikami s zaderzhkoi psikhicheskogo razvitiya [Basic Directions and Content of Correctional Work with Primary School Children with MDD]. *Defektologiya*, 2, 53–59.
- Babkina, N. V. (2016b). The Role of Conscious Self-Regulation in Realization of Cognitive and Personal Resources in a Child with Developmental Delay. *Clinical Psychology and Special Education [Klinicheskaya i spetsial'naya psikhologiya]*, 5(3), 40–55. <https://dx.doi.org/10.17759/psycljn.2016050303>.
- Babkina, N. V. (2017a). Life Competences as Integral Part of Educational Context for Children with Learning Delay. *Clinical Psychology and Special Education [Klinicheskaya i spetsial'naya psikhologiya]*, 6(1), 138–156. <https://dx.doi.org/10.17759/psycljn.2017060109>.

- Babkina, N. V. (2017b). *Psichologicheskoe soprovozhdenie mladshih shkolnikov s zaderzhkoy psichicheskogo razvitiya* [Psychological Support of Younger Students with Developmental Delay]. : dis. ... d-ra psihol. n. Moscow.
- Belopolskaya, N. L. (2013). *Eksperimentalno-psichologicheskie issledovaniya lichnosti detej s zaderzhkoy psichicheskogo razvitiya* [Experimental Psychological Studies of the Personality of Children with Developmental Delay]. Moscow: Kogito-Centr.
- Dmitrieva, E. E. (2017). Socialno-lichnostnaya gotovnost detej s zaderzhkoy psichicheskogo razvitiya k obucheniyu v shkole [Socio-personal Readiness of Children with Developmental Delay to School]. *Vospitanie i obuchenie detej s narusheniyami razvitiya*, 5, 33–38.
- Drobinskaya, A. O. (2006). *Diagnostika narushenij razvitiya u detej: klinicheskie aspekty* [Diagnosis of Developmental Disorders in Children: Clinical Aspects]. Moscow: Shkolnaya Pressa.
- Indenbaum, E. L. (2012). *Shkolniki s legkimi formami intellektualnoj nedostatochnosti: psichologo-pedagogicheskaya diagnostika i xarakteristiki psixosotsialnogo razvitiya* [Schoolchildren with Mild Forms of Intellectual Disability: Psychological and Pedagogical Diagnostics and Characteristics of Psychosocial Development]. Irkutsk: VSGAO.
- Korobeynikov, I. A. & Babkina, N. V. (2017a). Psychological Diagnosis as a Counseling Resource in Developmental Disorders in Children. *Counseling Psychology and Psychotherapy [Konsul'tativnaya psikhologiya i psikhoterapiya]*, 25(4), 11–22. <https://dx.doi.org/10.17759/cpp.2017250402>.
- Korobeynikov, I. A. & Babkina, N. V. (2017b). Differenciacija obrazovatel'nyh potrebnostej kak osnova differencirovannyh uslovij obrazovaniya detej s ZPR [Differentiation of Educational Needs as Basis for Differentiated Conditions of Education of Children with Mental Development Delay]. *Defektologiya*, 2, 3–13.
- Korobeynikov, I. A. (2002). *Narusheniia razvitiia i sotsial'naia adaptatsiia* [Developmental Disorders and Social Adaptation]. Moscow: PER SE.
- Korobeynikov, I. A. & Indenbaum, E. L. (2009). Problemy diagnostiki, korrekcii i prognoza pri organizacii soprovozhdeniya detej s legkim psichicheskim nedorazvitiem [Problems of Diagnosis, Correction and Prognosis in the Organization of Accompanying Children with Mild Mental Underdevelopment]. *Defektologiya*, 5, 22–28.
- Lubovsky, V. I., Korobeynikov, I. A. & Valyavko, S. M. (2016). Psychological Diagnostics of Developmental Disorders: A New Concept. *Psychological Science and Education [Psichologicheskaya nauka i obrazovanie]*, 21(4), 50–60. <https://dx.doi.org/10.17759/pse.2016210405>.
- Markovskaya, I. F. (1993). *Zaderzhka psichicheskogo razvitiya. Klinicheskaya i neyropsichologicheskaya diagnostika* [Impaired Mental Function. Clinical and Neuropsychological Diagnosis]. Moscow: Kompens-centr.
- Slepovich, E. S. & Polyakov, A. M. (2008). *Rabota s detmi s intellektualnoj nedostatochnostyu. Praktika spetsialnoj psikhologii* [Work with Children with Intellectual Disabilities. The Practice of Special Psychology]. Sankt-Peterburg: Rech.
- Vilshanskaya, A. D. (2008). Defektologicheskoe soprovozhdenie uchashhixsya s zaderzhkoy psichicheskogo razvitiya v obshheobrazovatelnoj shkole [Special Pedagogical Support of Children with Mental Development Delay in School]. *Vospitanie i obuchenie detej s narusheniyami razvitiya*, 1, 47–54.