

## MUTUAL RELATIONSHIP BETWEEN THE GENDER DIFFERENCES AND FUNCTIONAL ASSYMETRY OF THE HEAD'S HALF LOBES OF CHILDREN

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**Annotation.** *It can be assumed that the organization of education, taking into account the “subtle” link between the age periods of gender differences in preschool children and the formation of the head brain – is one of the important factors of successful socialization of the child's personality. Improper exposure to this process can adversely affect the child's psychological development, resulting in the development and behavior of the child with various deviations.*

**Keywords.** *Preschool education, gender, individualization of education, personally oriented education, weltanschauung, gender approach in education, parietal lobe, frontal lobe, gender identification.*

**Introduction.** Preparing children for school and educating them in the primary school is aimed at acquiring basic knowledge, skills and abilities that are not difficult for their age, but requires that they be developed in harmony with the development of speech, thinking and moral qualities. Because this stage is a period when children become individuals with a very complex psyche, during which their acquisition of knowledge and cognitive activity have a number of peculiarities. These peculiarities are that a number of individual qualities, such as thinking strategies, types of memory and attention, leading representative systems, also depend to some extent on the human gender.

**Main Part.** In English, the term “gender” refers to specific aspects of the relationship between socially organized groups between men and women. These relationships are different from biological relationships.

Gender differences in human development date back to the 1980s. Since then, genetics, psychology, sociology have aroused great interest among researchers in the field of philosophy. One of the important achievements in the field of pedagogy is the creation of opportunities for educating young people on the basis of gender equality and differences in order to humanize education.

In Uzbekistan, gender issues have been studied in the context of family and interpersonal relationships (E.Gaziev, G.Shoumarov, V.Karimova, I.Yokubov, B.Kadirov, S.Mirkhosilov, E.Usmonov, F.Akramova, L.Karimova, N.Salaeva, O.Shamieva, O.Abdusattorova and others). The study examined the impact of sibling relationships in the couple and the family on the child's

personality, including the role of the formation of masculine and feminine qualities, and made scientific conclusions<sup>1</sup>.

The problem of gender impact of parental relations on children has become the subject of research of M. Salayeva. In particular, in Uzbek families, mothers' excessive care for their children, such as protecting them from hardships, fear of harm, encouraging the child's attachment and dependence, suppressing sexuality and aggression, and the strength of democracy in fathers have been studied<sup>2</sup>.

In her research on the possibilities of education based on gender equality and differences, G.M. Kurbanova acknowledged that the educational process based on gender differences and equality makes an important contribution to the development of society, and elaborated on the impact of gender approaches on educational effectiveness. "The first task is to improve the existing curricula using new pedagogical technologies and modern methods to ensure the fulfillment of this task. Equality of boys and girls in the improved curricula, as well as the definition of teaching materials in all subjects on the basis of gender equality and differences, is important", said G.M. Kurbanova.<sup>3</sup>

The provision of educational materials taking into account the gender equality and differences of children in the course of the lesson, along with ensuring the consistent formation of observability, designing, hypothesizing, predicting skills, regulates social relations between boys and girls. The organization of the educational process using modern teaching aids requires the creation of methodological materials and didactic developments that meet international standards. At the same time, all teaching materials used in the educational process will have to be selected taking into account the means of control.

In the textbook "Gender Psychology" J.G. Duskaziyeva refers to the differences in the acquisition of information by boys and girls and suggests to take them into account in the educational process (Table № 1).<sup>4</sup>

Table № 1

**Differences in data reception, processing, and transmission by boys and girls**

№	Girls	Boys
1.	A quantitative approach is leading in data acquisition	The quality approach is leading in data acquisition

<sup>1</sup>Karimova V. Oilaviy hayot psixologiyasi: O'quv qo'llanma. – T.: 2006. – 142 b.

<sup>2</sup>Salayeva M. O'zbek oilalarida ota-ona va farzandlar uzaro munosabatlarining ijtimoiy psixologik xususiyatlari: Psixol.fan. nom. Darajasini olish uchun yozilgan dis. avtoref. – T.: 2005. – B. 18.

<sup>3</sup>Qurbanova G.M. Gender tenglik va farqlar asosida ta'lim berish imkoniyatlari // Zamonaviy ta'lim / Sovremennoye obrazovanie 2015, 12. – B. 59-63.

<sup>4</sup>Duskaziyeva J.G. Gendernaya psixologiya: uchebnoye posobiye / J.G. Duskaziyeva; Krasnoyarsk gos. ped. un-t im. V.P. Astafyeva. – Krasnoyarsk, 2010. – 108 s. (–S.71)

2.	Specifically thinking	Abstract thinking
3.	Predisposition to algorithm, template, and execution	Creativity and independence, a propensity
4.	Intuition and foresight, the specificity of the ability to analyze on an emotional basis	Synthesis is the predominance of the ability to generalize on a rational basis
5.	Prone to monologue and speech	There is a tendency to dialogue and communication
6.	In critical situations, the concentration of attention is lower, but the selectivity and volume of attention are higher	It is characterized by a high concentration of attention in critical situations
7.	The size of the short-term memory size	The small size of short-term memory
8.	The right hemisphere gets tired relatively quickly	The left hemisphere gets tired relatively quickly

J.G. Duskazieva defines the concept of "gender approach in education" as follows: "Gender approach in education - a set of tools, methods and techniques of teaching and education aimed at helping children to feel comfortable in the educational institution, to overcome all the difficulties of socialization relatively easily and to identify themselves as a girl or a boy".<sup>5</sup>

We believe that this definition of J.G. Duskazieva's concept of "gender approach in education" fully reveals the content and essence of this approach.

A.S. Deryabina examines how a person's future image is related to his or her gender differences, and considers the value orientation, life plans, and emotional attitudes toward the future of individuals belonging to different gender identities as key criteria. The scientist divides the subjects on gender differences into feminin, masculin and androgin types. Experiments have shown that different gender types do not have the same value-based relationship to the image of the future, but they have differences.<sup>6</sup>

In V.N. Chetverikova's dissertation, which deals with the consideration of gender identity in grammar, it was found that there are differences in the speech of boys and girls in the experimental medium, which is reflected in the use of modal verbs. He noted that gender identity is not reflected in the tendency to agree with any opinion..<sup>7</sup>

In Kamenskaya's doctoral dissertation on gender approach in pedagogy, she considers the essence of gender approach in pedagogy as "methodological orientation of pedagogical activity". This helps the child's personality to understand gender identity and develop a unique individuality. In

<sup>5</sup>Duskaziyeva J.G. Gendernaya psixologiya: uchebnoye posobiye / J.G. Duskaziyeva; Krasnoyar. gos. ped. un-t im. V.P. Astafyeva. – Krasnoyarsk, 2010. – 108 s. ( -S.73)

<sup>6</sup>Deryabina A.S. Obraz budushego v kontekste gendernix razlichiy: Avtoreferat na soisk ... kandidata psixologicheskix nauk.–Irkutsk, 2019. – 27 s.

<sup>7</sup>Chetverikova V.N. Grammaticheskaya realizasiya gendernoy spesifiki (na materiale tekstov Dj. K. Rouling o Garri Pottere): Dissertasiya na soisk. ... kandidata filologicheskix nauk. –Ivanovo, 2019. – 157 s.

pedagogy, the "gender approach" means the identification of differences and sexual identification in the upbringing of children, mainly through social mechanisms, the understanding of the essence of the concepts of "man" and "woman" and their upbringing accordingly. The main content of the gender approach in pedagogy is to take into account the specifics of influencing all the factors that affect the development of perceptions of men and women in the educational process. Corrects and directs children's gender issues, supports the development of value-oriented gender and individuality of the individual, the design of gender-oriented education strategies.<sup>8</sup>

According to the scientist, "the gender approach can be considered as a principle of modern education that combines the impact on the foundations of egalitarianism".<sup>9</sup>

I.A. Kurochkina's research is devoted to the organization of gender-oriented educational work with children left without parental care, taking into account the individual psychological and age aspects. The researcher considers gender identification as an integrative semi-functional dynamic structure of the individual. This structure depends on the socio-cultural norms, rules of conduct and needs of the young age of the relationship, mastered in the process of socialization of the individual.

The structure of gender identification consists of emotional-evaluative, cognitive, behavioral, and personal components that complement each other. I.A. Kurochkina identified four different gender identities during the research: masculin, feminin, androgin close to masculin, androgin, androgin close to feminin, and undifferentiated. For non-differentiated type gender identification, high levels of tension, irritability, propensity to internal conflict, negative attitude towards oneself, and the formation of bright states of emotional instability were identified.<sup>10</sup>

M.Yu. Ushakova studied the gender features of speech in middle and older preschool children and found that the organization of classes on the basis of a special program, taking into account these features, has a positive effect on the development of children's speech. According to the researcher, girls' speech is usually subjective, relatively free, in which the affective component is more common. In boys' speech, on the other hand, cognitive and thinking-related components are more prominent, dynamic and explanatory in nature. However, despite this, boys pay less attention to the use of lexical units in speech. In addition, the basic components of language, which are responsible for the use of lexical units in the speech of preschool middle and older girls, are actively developed. This is called the "horizontal" trajectory of speech development. In boys, more complex grammatical operations, ie the "vertical" trajectory of speech development, are relatively well developed.<sup>11</sup>

N.Kh. Yunusova, V.J. Anvarova, D.R. Gulyamov, K.M., Nurboev, F.T. Khamidova and F.O. Tursunova studied the interaction of children's cerebral hemispheres with their gender differences. Preparing children for school, their acquisition of knowledge and cognitive activity during the primary school education have a number of peculiarities. One of them concluded that the human sex is inextricably linked with the asymmetry of the functions of the cerebral hemispheres.

<sup>8</sup>Kamenskaya Ye.N. Tenderniy podxod v pedagogike: Avtoref. diss. ...doktora pedagogicheskix nauk.–Rostov-na-Donu, 2006. – 64 s.

<sup>9</sup>Ibid. 10-стр.

<sup>10</sup>Kurochkina I.A. Razvitie gendernoy identichnosti detey-sirot podrostkovogo vozrasta: Avtoreferat diss... kandidata psixologicheskix nauk.–Ekaterinburg, 2020. – 26 s.

<sup>11</sup>Ushakova M. Yu. Gendernie osobennosti rechi detey doshkol'nogo vozrasta: Avtoreferat diss... kandidata psixologicheskix nauk.–Irkutsk, 2006. – 24 s.

Because brain activity in boys and girls differs from an early age, the course of mental processes is also different. In the process of socialization of boys and girls, their speech and thinking develop at different speeds and volumes. In all ranges of childhood, girls' aural (verbal) memory size differs significantly from that of boys.

Researchers therefore consider it appropriate to take two different approaches to the upbringing of boys and girls, primarily the development of speech and thinking. They suggest not to divide children into separate groups, but to take into account these peculiarities in the preparation of educational information provided to them.<sup>12</sup>

M.G. Gazzani<sup>13</sup>, Eric R. Kandel<sup>14</sup>, Randall C. O'Reilly and Yuko Munakata<sup>15</sup> found that the development of components and systems of the human brain is activated only in specific social conditions, subject to basic neurobiological laws.

They believe that in the process of raising and educating children, it is important to pay special attention to the need to take into account not only the personality of the child, but also the peculiarities of the organization of his brain activity. Such a solution to the problem requires the replenishment of preschool education institutions with modern teaching materials and literature, the involvement of qualified teachers in the field, the improvement of teaching methods, the gradual implementation of the principles of individualization in the educational process.

Scientific research in the field of pedagogical neuropsychology (L.Ya. Balonov, V.L. Deglin, Ye.D. Khomskaya, Moskvina, N.N. Nikolayenko.) it is proved that the knowledge given in the educational process is directed not only to the preservation of memory, but also to its understanding (that is, the formation of "literate thinking"), taking into account the peculiarities of the data acquisition processes in the human brain, to optimize and activate the process of cognition.

The question of the relationship of asymmetry of the cerebral hemispheres with the activity of human cognition and creative thinking was studied by DR Gulyamov and QM Nurbaev, and since the development of the child's psyche at an early age is directly related to the growth and formation of the brain. It has been found that taking into account the "delicate" balance is one of the important factors in the organization of the educational process.<sup>16</sup> The "subtlety" of this balance is that if it is used correctly and rationally in the teaching process, the child is provided with the active formation and development of mental and intellectual abilities, creativity, social qualities and abilities.

The organization of education in preschool children, taking into account the "subtle" relationship between the age of gender differences and the formation of the brain - can be considered

<sup>12</sup>Yunusova N., Gulyamov D.R., Anvarova V. Bolalar bosh miya yarimsharlari faoliyatining ularni gender farqlari bilan o'zaro bog'liqligini o'rganishga doir / -Toshkent, "Pedagogika" J., №2, 2016. –B.37-42.; Гулямов Д.Р. ; Nurboev Q.M., Hamidova F.T., Tursunova F.O. Neyropedagogika asoslari / O'quv qo'llanma. –Navoiy, 2020. – 203 b. (72-73-betlar)

<sup>13</sup>Gazzaniga M.G. The Cognitive Neurosciences/ A Bradford Book The Mit Press Cambridge, Massachusetts London, England/ 2009. Massachusetts Institute Of Technology.

<sup>14</sup>Eric R. Kandel. In Search Of Memory The Emergence of a New Science of Mind Copyright, 2006.

<sup>15</sup>Randall C. O'Reilly and Yuko Munakata. Computational Explorations in Cognitive Neuroscience. – 503 p.

<sup>16</sup>Gulyamov J.R., Nurboev Q.M., Mirzayev A.U. Organization of the educational process taking into account the functional asymmetry of the brain of students as a factor of the development of thinking creativity // SST, Solid state texnologii / [www.solidstatetexnologii.us/index.php/IJSSIR](http://www.solidstatetexnologii.us/index.php/IJSSIR); Gulyamov D.R. Uchet osobennostey mejpolusharnoy funktsional'noy asimmetrii mozga kak faktor povisheiya poznavatel'noy aktivnosti uchashixsya // "Pedagogika" J., № 3, 2018.– C. 10-19. / [http://www.tdpu.uz/uploadfiles/5842\\_360\\_2018-3.pdf](http://www.tdpu.uz/uploadfiles/5842_360_2018-3.pdf).; Gulyamov D.R. Bilish jarayoni faolligi va neyropedagogik tadqiqotlar talqini / -Toshkent, "Pedagogika" J., №5, 2015. –B. 29-35.

one of the important factors in the successful socialization of the child's personality. Improper exposure to this process can adversely affect a child's mental development, leading to various deviations in the child's development and behavior. Because the process of teaching preschool children in the form of classroom lessons, creates a lot of difficulties in the process of adapting them to the learning environment. The main reason for this is that in the preschool period, the process of formation of children's mental functions - attention, memory, imagination, logical thinking, emotional and volitional spheres, is actively continuing.<sup>17</sup>

It can be clearly seen that girls 'and boys' perceptions of information and thinking strategies, and, as a result, the mechanisms for acquiring new knowledge and forming skills, also differ from each other. The main reason for this is that all children differ in the volume of information reception and processing, the size of attention and memory, the superiority of this or that memory system, the course of cognitive processes, imagination and perception of existence, "seeing the world". It is these differences that determine the individuality of children.

**Discussion.** It is inextricably linked to the organization of brain activity - which of the hemispheres plays a leading role in human life activity. This is because although both hemispheres are involved in complex cognitive processes, each hemisphere differs from each other in the use of different sign systems and comprehension strategies in receiving and assimilating information using their own language and signs. In general, the left hemisphere is characterized by rational-definite thinking, so such children are more prone to perform analytical, classification, abstract, algorithmic, inductive operations. They are more communicative and active people than others because they prefer to work with problems in analysis and solve them in a logical way.<sup>18</sup>

Based on the above, taking into account the gender differences of preschool children in the educational process is one of the important factors in their education and upbringing. At the preschool age, most of the boys experience the development process of the head brain a little slower than that of girls, and the central nervous systems will not be ready to absorb the data at the same speed. Therefore, in the process of socialization of boys and girls, their speech<sup>19</sup> and thinking<sup>20</sup> develop at different speeds and volumes.

**Conclusion.** Development of differences in children's physiology is also influenced by the attitude of the social environment towards them during growth. The main goal of research on gender equality and differences in pedagogy in general and in preschool education in particular is to study the similarities and differences in the social behavior of the sexes and to take them into account in the educational process. At the same time, the gender approach to the educational process is aimed at ensuring that the process of socialization of children is easy and comfortable, selecting and applying in practice the necessary tools, methods and techniques of education to help them identify themselves as girls or boys.

<sup>17</sup>Gulyamov J.R., Nurboyev Q.M., Khuzhakulov N.T. Teaching Children Of Preschool Age In Neurodidactic Conditions // Palarch's Journal Of Archaeology Of Egypt / Egyptology 17(6). ISSN 1567-214x / PJAEE, 17 (6) (2020) P.14485-14494. / <https://solidstatetechnologi.usindex.php/ISSST>.

<sup>18</sup>Gulyamov D.R., Nurboev Q.M., Hamidova F.T., Tursunova F.O. Neyropedagogika asoslari / O'quv qo'llanma. – Navoiy, 2020. – 203 b.

<sup>19</sup>Ushakova M.Yu. Gendernie osobennosti rechi detey doshkol'nogo vozrasta: Avtoreferat diss... kandidata psixologicheskix nauk.–Irkutsk, 2006. – 24 s.

<sup>20</sup>Gulyamov D.R., Nurboyev Q.M. Maktabgacha yoshdagi bolalarga ta'lim berishda bosh miya yarimsharlari asimmetriyasini hisobga olish muammosi// Uz MU Axborotnmasi, 2020, ¼. - B. 89-93.

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