

EDUCATIONAL PSYCHOLOGY

School readiness outcomes of different preschool educational approaches

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Background. The variety of preschools is one of the primary issues of contemporary early education in Russia. The *traditional approach* focuses on the transmission of knowledge, patterns of social behavior, and assumes teacher-centered interaction between child and teacher. The *developmental approach* focuses on developing the child's abilities and using cultural tools, rather than just transmitting educational content. A comparison of different preschool approaches and outcomes may help in choosing the most suitable one for each child.

Objective. The aim of this study is to identify the connection between approaches in preschool and children's school readiness.

Our hypothesis is that the traditional approach and the developmental approach provide different school readiness outcomes.

Design. Ninety-two preschool students (51 boys and 41 girls) aged six to seven were involved in this study. These children attended preschools in the western and southwestern districts of Moscow. Six preschool psychologists and teachers were interviewed. The research was conducted between 2011 and 2013.

Results: An empirical study proved that most children achieve a high level of cognitive readiness, can interact with successfully peers, and can control aggression; however, they also have difficulties with cooperative relations with their teacher and with expressing their opinion. A comparison of school readiness outcomes of the traditional and developmental approaches showed that the children who attended a preschool with the developmental approach demonstrated a higher level of school readiness: They are able to ask for help, to coordinate their creative intentions with peers, and to empathize with them. Their self-consciousness is greater than that of their peers who are educated under the traditional approach. Also, they demonstrate a greater voluntary readiness for school. Meanwhile, children who attended preschools with the traditional approach demonstrated a higher level of verbal-logical reasoning.

Conclusions: The traditional and developmental preschool approaches both provide some components of children's school readiness. However, the developmental approach has higher outcomes because it fosters children's initiative, an equitable teacher-child relationship, and takes into account children's individual characteristics.

Keywords: school readiness, traditional preschool approach, developmental preschool approach

Introduction

In the Russian Federation, education is divided into general and occupational parts. Preschool education is the first stage of general education, according to the Education Act. Children aged 6.5 to 8 are required to be in school (Federal law of the Russian Federation of 29 December 2012, N 273-FZ "On education in the Russian Federation"). Preschools accept children aged 2 months to 7 years.

Russian law states that all children have the right to equal opportunities and access to an appropriate educational trajectory, according to their educational needs, interests, and personal characteristics (Federal law of the Russian Federation of 29 December 2012 N 273-FZ «On education in the Russian Federation»). That is why the variety of preschools is a primary issue of contemporary early education in Russia. The traditional approach focuses on the transmission of knowledge, patterns of social behavior, and assumes teacher-centered interaction between child and teacher. The developmental approach focuses on developing the child's abilities and using cultural tools, rather than just transmitting educational content. Child-teacher communication assumes a partnership, an individualized approach, and aims to develop children's initiative (Rubtsov & Yudina, 2010).

A comparison of different preschool approaches and outcomes may help in choosing the most suitable approach for each child.

School Readiness

School readiness ensures that children start school with the best possible trajectory for later life (Emig, 2000). Over the past 25 years, ideas about school readiness have changed significantly. School readiness is no longer assumed to correspond to a child's chronological age or specific skills and competencies (Snow, 2006). School readiness not only applies to the child; the kindergarten, family, and school are also responsible for the child's school readiness.

According to the *ecological approach*, school readiness is multifactorial and takes into account the child, the family, the school, and the community (Pianta, Rimm-Kaufman, & Cox, 1999). The child factors include cognitive development, physical well-being and motor development, social-emotional development, emerging literacy, etc. The family factor refers to the available resources to meet such family needs as medicine, social services, education, and employment. The school (and preschool) factor mostly depends on developmentally appropriate programming. The community factor refers to access to quality childcare (Ladd, Herald, & Kochel, 2006).

As stated by the U.S. National School Readiness Indicators Initiative (2005), "Children will not enter school ready to learn unless families, schools, and communities provide the environments and experiences that support the physical, social,

emotional, language, literacy and cognitive development of ... preschool children". This reconceptualization of school readiness shows the importance of the environmental factors that contribute to child development.

This article focuses on the connection between the preschool factors and child factors.

Child Factors of School Readiness

A child's school readiness is defined as the level of mental development that is necessary and sufficient for the development of a common school curriculum (Paramonova, 1989; Smirnova, 1998; Vygotsky, 1956).

The specific terms used by researchers to label school readiness domains vary. Most common are physical health, social knowledge, emotional maturity, language and cognitive development, and general knowledge (Prior, Bavin, & Ong, 2011). In keeping with Russian tradition, a child's school readiness includes cognitive and personal components, and voluntary behavior regulation (Gutkina, 2006). The cognitive component includes intellectual abilities, imagination, and non-verbal intelligence (El'konin & Venger, 1988). The personal component consists of the ability to cooperate with peers, and to ask for help from the teacher or peers. The cognitive development of a child is frequently thrust into the spotlight, while the fields of personality and social interaction do not get enough attention. Cognitive abilities are not the only important features of a person at different stages of development. To be successful and accepted by a group, one should also possess definite communicative skills, be able to justify one's point of view, solve problems constructively, and be ready to accept that others may have a differing point of view. Some researchers call these abilities social intelligence; this construct is also known as social competence. It addresses such important aspects of child development as the emotional realm and social interaction with both adults and peers. Voluntary behavior regulation refers to the ability to remember and follow rules (Smirnova, 1998; Tsukerman & Polivanova, 1992). Children's readiness for school has many components and is shaped by numerous factors. Improving school readiness, therefore, must address children's development of skills and behaviors as well as the environments in which they spend their time.

Preschool Factors Contributing To School Readiness

One of the factors that facilitate children's school readiness is participation in some type of high-quality preschool education. Such education is advantageous to all children, but developmentally targeted preschool approaches can be especially effective.

There are nevertheless a number of specific strategies that facilitate the transition to school and underpin later success (Elliott, 2006).

The new concept of school readiness recognizes that early childhood development is influenced by the characteristics of and relationships among children, the family, and the broader social environment.

Early education is very important. Participation in preschool educational programs by children aged four to six is more effective than correction of dysfunctional development at a later stage. This happens due to the openness of preschoolers to

environmental influences. Preschool education brings a better result in achieving the best possible developmental trajectory (Emig, 2000).

Preschool is the first stage of education in Russia. The state guarantees all children aged three to seven free access to preschool. There are about 45,000 preschools serving more than 5,000,000 children. Because of the significant increase in the birth rate during the last five years and the lack of sufficient preschools, new types of institutions, including family kindergartens, have been established.

One of the most significant fundamental characteristics of contemporary preschool education is the recognition of the diversity of children's needs, abilities, interests, and living conditions.

Moreover, all children are guaranteed access to an appropriate preschool, with different parameters to fit their needs, opportunities, and conditions. Contemporary educational conditions allow preschools to choose the content, methods, and developmental trajectories for their students, to develop original curricula, innovations, etc.

On the one hand, the growing variety of preschools expands the opportunity to create educational conditions that best fit a child's individual needs. On the other hand, it is not clear whether there are significant differences between the different approaches.

Differences in Preschool Approaches

Preschool pedagogy in Russia may differ by its curriculum, teacher-student ratio, main goals, teacher-parent interaction style, etc.

According to the ecological approach to preschool, there is a spatial component (classrooms, adjacent area), a social component (teacher-student interaction, peer communication), and a psycho-didactic component (teaching methods, curriculum, and educational content) (Yasvin, 2001).

The two most popular approaches are the traditional and the developmental. These differ in their objectives, the type of child-teacher interaction, class space, as well as how to prepare a child for school.

The distinction between the traditional approach and the developmental approach is based on Davydov's theory of developmental education (1996) and on the idea that learning stimulates development (Vygotsky, 1956). The key concept of developmental education is that tasks can't be solved automatically. Children are involved in situations where they need to actively search for a tool to solve the problem. The basis for this approach is how the child is treated, and how self-changing is the subject of the teaching. The traditional approach conceived of the child as an object of teaching by adults. The developmental approach considers a child as a being who requires and is able to perform self-modification (Rubtsov & Yudina, 2010).

Thus, the developmental approach focuses on developing abilities, using mental tools, and taking initiative. This occurs through the development of a child's personality. The educational content highlights the individual characteristics of each child. An adult encourages children to take independent action in experimentation, solving tasks, and the everyday routine. The developmental approach seems to be useful to develop independence, curiosity, and creativity.

Table 1. Differences in preschool approaches

	Developmental approach	Traditional approach
Objectives	Developing learning abilities and using cultural tools, rather than just educational content	Transmission of knowledge, patterns of behavior in society, social attitudes
Child-teacher interaction	How to learn is more important, than what to learn. Child-centered interactions Cooperation and partnership between teacher and children Child-teacher communication assumes cooperation, partnership, goodwill, an individual approach to every child. Teacher promotes freedom and educational initiative. Teacher does not transmit knowledge but provokes children to explore interesting questions and investigate problems on their own.	What to learn is more important than how to learn. Teacher-centered interaction Teacher has exclusive authority. Teacher is the repository of knowledge, skills, and life experience. Teacher directs and manages the education and care of the children.
Classroom	Materials used in learning are available during play time. Class space provides enrichment according to recent learning tasks. Toys, games, and other items that pique child's interest	Classroom designed to prioritize safety, aesthetic, and educational benefits Classroom assumed to be spacious, safe, attractive
School readiness	Children learn how to use mental tools, how to cope with different tasks. Children learn to solve problems independently, to learn consciously, to be active, responsible, and innovative.	Children learn math, reading, writing, etc. Children learn to be patient, polite, and to behave appropriately.

The traditional approach is aimed at socialization as well as knowledge and skills enrichment. The educational content is the same for all the children regardless of their individual interests and needs. The teacher imparts knowledge to the children through conversations, lessons, or games. The traditional approach seems to be useful for raising obedient, cooperative, and disciplined children, whose attention is focused on the adult.

In conclusion, we can state that there are differences that affect curriculum design based on their educational environments and the realization of their potential.

The main objective of the developmental approach is the development of child's abilities, initiative, and curiosity, involving themselves in their surroundings by internalizing mental tools.

This approach is assumed to provide a high level of self-regulation, and awareness. Along with socialization, individualization occurs by considering the children's unique characteristics. Personal and social development are derived from learning.

The traditional approach focuses on developing social skills, promotes health, and transfers knowledge from teacher to student.

All these differences may lead to different learning outcomes. The traditional and developmental approaches may have long-term effects (employment, health, happiness), short-term effects (social and emotional well-being, intelligence) or include learning outcomes and components of school readiness.

Research Questions and Hypotheses

The aim of this study is to identify a connection between preschool approaches (as a part of the societal factor of school readiness) and children's school readiness. Our research questions are:

- Q1.** Are there any differences in the school readiness outcomes for the developmental and traditional approaches and what are they?
- Q2.** What are the benefits of the traditional preschool approach and the developmental preschool approach for children who attend them?

Method

Participants: 92 preschool students (51 boys and 41 girls), aged six to seven. Forty-four of these children attended a preschool with the traditional approach and 46 attended a preschool with the developmental approach. The two preschools were located in different Moscow districts. Six preschool psychologists and teachers employed in these preschools were interviewed for this study. Research was conducted between 2011 and 2013.

Measures

1. The Method of Express-Diagnostics of Intellectual Abilities (Shcheblanova, Averina, & Zadorina, 1994).

This method contains four subtests, each subtest containing five tasks. Subtest 1 is aimed to evaluate awareness. According to the manual, children have to identify a specific subject among five pictures. For example, it might be the word "rodent", or "hand plane". Subtest 2 evaluates the understanding quantitative and qualitative ratios. The children have to identify a picture of a thermometer that shows a temperature higher than the lowest one, but lower than the others. Subtest 3 evaluates verbal-logical reasoning. The task is to identify and mark one irrelevant picture from among five other pictures (for example, a square among various circles). Subtest 4 evaluates mathematical abilities. For example, the children are asked to look at a picture of a piece of cake. Then the children are asked to choose another piece of cake (from among the pictures shown below), which, in combination with the first one, gives a whole cake.

2. Standardized diagnostic technique "Schematization" (D'yachenko & Bulycheva, 1996).

This technique measures figurative thinking. The test material is a 12-page copybook. Each page contains the image of branched paths (a maze) that lead to the houses. Under the image of the paths, there is a map showing the path to a particular house. The child's task is to find and mark this house.

3. Standardized diagnostic technique “Systematization” (N.B. Venger) (D’yachenko & Bulcheva, 1996).

This technique evaluates verbal-logical reasoning. The test material is a 9-page notebook. Each page contains a grid of 36 cells. In the top row of the table there are circles decreasing in size. The left column of the table is filled with geometric shapes: triangle, trapezoid, square, pentagon, hexagon, circle (all the figures are large). The right column is packed with the same shapes, but small. The cells themselves are blank. Under the table there are two geometric shapes. The child’s task is to put these shapes in the empty cells of the table.

4. Raven’s Colored Progressive Matrices (Raven, Raven, & Court, 2003).

Colored Progressive Matrices are designed for children aged 5 through 11, the elderly, and mentally and physically impaired individuals. This test contains sets A and B from the standard matrices, with an additional set of 12 items inserted between the two, as set Ab. Most items are presented on a colored background to make the test visually stimulating. However, the very last few items in set B are presented as black-on-white; in this way, if a subject exceeds the tester’s expectations, transition to sets C, D, and E of the standard matrices is eased.

5. Structured teacher’s survey

This survey investigates teachers’ opinions about their students’ social and personal development. It asks them to evaluate the child’s ability to make contact with adults, to interact with peers, to ask for help, to coordinate their creative intentions with peers, to be empathic toward peers, to defend their own opinions, and to be self-conscious. For example, questions included: Does the child easily make contact with adults? Is she/he able to interact with the teacher politely? Is she/he interested in the opinion of the adult about the child’s achievements and behavior? The teachers had to evaluate each competency level from 1 (very poor, child rarely acts like this) to 3 (very good, child usually acts like this).

6. “Educational Activity” (L.I. Tsechanskaya) (D’yachenko & Bulcheva, 1996).

This method identifies the child’s ability to subordinate his or her actions to the rules, to act in accordance with the instructions of an adult. The task is to draw an ornament combining geometric shapes according to the adult’s instructions and three specific rules.

The assessment of mental abilities, figurative thinking, verbal-logical reasoning, and self-regulation was conducted in a kindergarten. Small groups of children (5-7 children) were invited to the psychologist’s office, where the researcher asked them to complete the task according to the manual. Each child sat at a desk and performed the tasks on individual paper forms. Measuring of abstract reasoning (Raven’s Colored Progressive Matrices) was conducted with each child individually. The results of the evaluation were available only to the parents.

A structured teacher’s survey was conducted individually; teachers could fill out questionnaire at any convenient time. They were assured that their answers would be used for research purposes only.

All the students’ parents signed an informed consent form at the beginning of the school year, stating that the children could go through psychological assessment.

Table 2. Indicators and methods

Readiness component	Setting	Name of test
Cognitive	Awareness	The Method of Express-Diagnostics of Intellectual Abilities (Shcheblanova et al., 1994)
	Figurative thinking	Standardized diagnostic technique "Schematization" (D'yachenko & Bulicheva, 1996; Venger, Kholmovskaya, et al., 1978) (R=0.86)
	Verbal-logical reasoning	The Method of Express-Diagnostics of Intellectual Abilities (Shcheblanova et al., 1994), "Systematization" (D'yachenko & Bulicheva, 1996; Venger et al., 1978) (R=0.91) Raven's Progressive Matrices (R=0.70–0.90)
Personal	Contact with adults	Structured teacher's survey
	Peer interaction	
	Asking for help	
	Coordinating creative intentions with peers	
	Empathy toward peers	
	Ability to defend own opinion	
	Self-consciousness	
Voluntary behavior regulation	Controlling aggressive reactions	Structured teacher's survey
	Following rules and adult's instructions	"Educational Activity" (D'yachenko & Bulicheva, 1996; Venger et al., 1978) (R=0.78–0.90)

Results

Cognitive school readiness component of children from the traditional approach groups

The awareness of 66.7% of preschoolers in this subgroup was at a medium level; 21.8% of participants had a high level of awareness; 5.6% had a low level of awareness. 61.1% of children from the traditional approach groups possessed a medium level of development of figurative thinking; a high level of development was demonstrated by 22.2%; a low level by 16.7%.

Verbal logical reasoning was highly developed for 66.7% of these preschoolers; a medium level for 27.8%; and a low level for 5.6%.

Cognitive school readiness component of children from the developmental approach groups

70.5% of children from the developmental approach groups had a medium level of awareness; a high level was observed in 29.5% of cases. A low level was not detected.

Well-developed figurative thinking was demonstrated by 45.5% of preschoolers from the developmental approach groups. These children were able to use a map and follow directions. A medium level of acquisition of the ability to plan was demonstrated by 54.5% of respondents. These children independently oriented themselves in visible space, and oriented successfully according to a plan with a little adult assistance. No subjects from this subgroup demonstrated low figurative thinking.

A high level of development of elements of verbal-logical reasoning was shown by 38.7% of the sample. They were able to classify objects according to given characteristics. 59.1% of children from the developmental approach groups had a medium level of logical reasoning. They were able to classify objects according to given characteristics with insignificant adult assistance. However, justification of their personal conclusions about objects' belonging to a particular class was difficult for many of them. Only one respondent possessed a low level of verbal-logical reasoning. He was able to classify objects only with significant adult assistance.

Personal school readiness component of children from the traditional approach groups

The following features of the personal component of school readiness are distinguished for late preschool children from traditional approach groups. 54.5% of participants easily make contact with adults. They are able to interact with teacher politely; they are interested in the opinion of an adult about their achievements and behavior, and consider adults to be source of cultural norms and examples of the proper behavior. 45.5% of participants experience slight difficulties in making contact with the teacher. There were no preschoolers experiencing significant difficulties in interaction with a teacher in this group.

61.4% of children from the traditional approach groups were successful in their interaction with peers. It did not require much effort from them to make contact with others in their preschool group; they made friends, and took part in games and the social life of their group with pleasure. 38.6% of children faced some problems while interacting with their peers. It was not easy for them to find common interests with other children and to establish long-term friendships without adult assistance. There were no children in this group who were not able to establish any contact with their peers.

Asking for help from others in difficult situations was also analyzed as an indicator of a child's social readiness for school. 56.8% of participants from the traditional approach part of the sample were seldom able to ask their teachers and peers for help. These children were used to resolving conflicts with other children with the help of their teacher, but they did not use this opportunity often. Rendering assistance to peers can be characterized as episodic and random. Asking for help and helping others were habitual for 40.9% of participants. Unwillingness and an inability to help others characterized only one child.

The ability to cooperate is also an important part of the communicative component of personal readiness. Coordination of creative intentions with peers characterized 54.5% of children from the traditional approach groups. They listened to their teacher's and peers' advice; they were able to compromise; but, at the same,

they were not always interested in a joint result, but more in the realization of their own personal wishes. Regular and engaged cooperation was found in 45.5% of children. These participants eagerly cooperated with their peers both in play and in solving cognitive tasks. There were no children unable to coordinate their creative intentions in this group.

Emotional maturity expressed in empathy toward peers was at a medium level for 56.8% of participants. However, while these preschoolers were able to adequately appraise the emotional state of their counterpart, their actions did not always correspond to this state and were not always directed towards helping the other child. 40.9% of children from the traditional approach groups were able to correctly identify the emotional state of their counterpart and give them emotional support. Only one child was unable to show empathy toward peers. His behavior could be characterized as infantile and indifferent to the feelings of others.

The ability to argue in support of their position was at a medium level for 52.3% of participants. Preschool children tended to defend their opinion, but if their argumentation was not sufficient to convince their opponents, they easily abandoned it, altered their point of view, or became depressed and withdrew from the situation. 27.3% of the children possessed a high level of argumentation and a relatively consistent point of view. 20.5% of participants used explanations to defend their opinion. Usually disagreements turned into quarrels or conflicts.

Self-consciousness in 63.3% of children from the traditional approach groups was characterized primarily by a medium level of development of representation of the self and one's personal abilities. These children have a representation of the most significant areas of their personal success (in particular, their ability to follow norms and rules), but usually these self-representations were weakly differentiated. A high level of self-consciousness was characteristic of 36.4% of respondents of the subgroup under consideration here. These preschoolers were able to estimate their merits and difficulties and had a sufficiently complex self-representation and understanding of how they are perceived by people surrounding them (teachers, parents, etc.)

Personal school readiness component of children from the developmental approach groups

74.5% of children from the developmental approach groups could make contact with adults successfully. These children knew how to address their teacher in a culturally acceptable form; the teacher is a source of new knowledge and emotions for them, and the children are sensitized to interaction in the situation of a cognitive task. A medium level of consideration skills was observed in 21.3% of respondents. Interaction with the teacher for them means getting assignments and tasks, which they tend to manage on their own, demonstrating their results to the teacher occasionally.

69.9% of children from the developmental approach groups could interact with peers successfully. Their interaction was characterized by ease of making contact, including contact in joint cognitive activity. A medium level of these skills was observed in 26.1% of participants. 4.3% of children had a low level of social skills. They are self-contained and experienced difficulties in interacting with peers.

76.1% of the participants were willing to ask for help and render assistance to others. 23.9% of respondents did that rarely. There were no children who did not respond to requests for help and did not ask for help in this subsample.

Coordination of creative intention with peers is necessary for cooperation and was habitual for 73.9% of the subgroup under consideration here. 26.1% occasionally addressed their partners. There were no preschoolers who were not able to cooperate and coordinate creative intentions among children from the developmental approach groups.

78.3% of the sample had a high level of empathy toward peers. These children understood the emotional state of another child and could offer emotional support. Such qualities of empathy were not common for 17.4% of preschool children from this subgroup. 4.3% were unable to console and give support to others.

80.4% of children from the developmental approach groups were able to use arguments to defend their opinions in interaction with other children. A medium level of this communicative skill was observed in 17.4% of children. A low level was perceived in only one respondent. This child was inclined to stick to his own point of view without attempting to explain it.

84.8% of children had adequate self-consciousness, representation of self and their abilities. They could assess their achievements and successes and were aware of the fact that some of their skills and qualities are imperfect. Their self-representation was sufficiently explicit. For example, one of the participants, Fedya D., told the researchers that he liked and had been able to tell stories and solve problems well, but was “not able to draw a man or an animal”. Moreover, he was capable of comparing his abilities in a particular area with the achievements of his counterparts: “Amir is obviously a much better dancer than I am, but I am better at constructing things”. 13.0% of respondents had less differentiated and adequate self-consciousness. These children were not able to distinguish between their real and ideal selves. Their personal capabilities were sometimes perceived inappropriately by them. For example, Dima S. praised his friend and himself for a similar ability to draw, but this generalization was caused mostly by his wish to be similar to his successful partner, not by real achievement of his own. Inadequate self-representations and inability to assess personal abilities fairly were significant for only one child.

Voluntary behavior regulation of children from the traditional approach groups

Ability to control aggressive reactions was also analyzed in the context of school readiness. 52.3% of children from the traditional approach groups did not show any aggression towards people surrounding them. These children solved problem situations with the help of their teacher; they did not resort to hostile actions or statements. 43.2% of the respondents were not always ready to contain their aggressive tendencies, but in most cases behaved in a friendly manner even in conflict situations. 4.5% of children displayed aggression regularly, using verbal and physical pressure against their peers as a way of dealing with conflicts that were beyond their control.

Table 3. School readiness components

		Developmental Approach	Traditional Approach
Cognitive school readiness component			
Awareness	High	29.5%	21.8%
	Medium	70.5%	66.7%
	Low	0%	5.6%
Figurative thinking	High	45.5%	22.2%
	Medium	54.5%	61.1%
	Low	0%	16.7%
Verbal-logical reasoning	High	38.7%	66.7%
	Medium	59.1%	27.8%
	Low	2.3%	5.6%
Personal school readiness component			
Contact with adults	High	74.5%	54.5%
	Medium	21.3%	45.5%
	Low	4.3%	0%
Peer interaction	High	69.6%	61.4%
	Medium	26.1%	38.6%
	Low	4.3%	0%
Asking for help	High	76.1%	40.9%
	Medium	23.9%	56.8%
	Low	0%	2.3%
Coordinating creative intentions with peers	High	73.9%	52.3%
	Medium	26.1%	43.2%
	Low	0%	4.5%
Empathy toward peers	High	78.3%	45.5%
	Medium	17.4%	54.5%
	Low	4.3%	0%
Ability to defend own opinion	High	80.4%	27.3%
	Medium	17.4%	52.3%
	Low	2.2%	20.5%
Self-consciousness	High	84.8%	36.4%
	Medium	13.0%	63.6%
	Low	2.2%	0%
Voluntary behavior regulation			
Controlling aggressive reactions	High	80.4%	40.9%
	Medium	10.9%	56.8%
	Low	8.7%	2.3%
Following rules and adult's instructions	High	4.3%	7.1%
	Above average	56.5%	26.2%
	Medium	28.3%	42.9%
	Below average	6.5%	2.4%
	Low	4.3%	21.4%

Voluntary behavior regulation of children from the developmental approach groups

Control of aggressive reactions was demonstrated by 80.4% of children from the developmental approach groups. Slight difficulties were experienced by 10.9% of respondents. The least number of children, 8.7%, were unable to control hostility towards their peers and usually found themselves at the center of conflicts.

Significant Differences in School Readiness Outcomes

Analysis of the psychological school readiness of children from the developmental and traditional approach groups demonstrates their essential specificity. The Mann-Whitney test ($p=0.05$) was performed to find significant differences between the two groups. Comparison of the traditional and developmental approaches' school readiness outcomes showed the following:

Differences in personal school readiness component

Children from the developmental approach groups make contact with adults significantly more successfully (mean in the developmental approach=49.33, in the traditional approach=41.50, $p=0.08$). These children are more eager to ask for help and to assist other people (mean in the developmental approach=52.74, mean in the traditional approach=37.08, $p=0.001$).

The emotional development of children from the developmental approach groups is characterized by greater empathy toward peers (mean in the developmental approach=52.64, mean in the traditional approach=37.18, $p=0.001$).

Table 4. Traditional and Developmental Approach Outcomes in Components of Personal Preschool Readiness

Measure	Approach	Number of participants	Mean	Significance level
Communicative				
Asking for help	Traditional approach	44	37.08	0.001
	Developmental approach	45	52.74	
	Total	89		
Coordinating creative intentions with peers	Traditional approach	44	38.73	0.008
	Developmental approach	45	51.13	
	Total	89		
Emotional				
Empathy toward peers	Traditional approach	44	37.18	0.001
	Developmental approach	45	52.64	
	Total	89		
Self-concept				
Self-consciousness	Traditional approach	44	34.50	0.000
	Developmental approach	45	55.27	
	Total	89		

The self-consciousness of the developmental approach students is significantly higher than the traditional approach students (mean in the developmental approach = 55.27, mean in the traditional approach = 34.50, $p=0.000$).

Differences in voluntary behavior regulation component of school readiness

The level of voluntary behavior regulation ("following rules and adult's instructions") is much higher in the developmental approach groups (mean in developmental approach = 50.38, mean in traditional approach = 38.06, $p=0.016$).

Control of aggressive reactions turned out to be higher for children from the developmental approach groups (mean in developmental approach = 50.37, mean in traditional approach = 39.51, $p=0.017$).

Table 5. Traditional and Developmental Approach Outcomes in Voluntary Behavior Regulation

Measure	Approach	Number of participants	Mean	Significance level
Following rules and adult's instructions	Traditional approach	42	38.06	0.016
	Developmental approach	46	50.38	
	Total	88		
Control of aggressive reactions	Traditional approach	44	39.51	0.017
	Developmental approach	45	50.37	
	Total	89		

Discussion

The characteristics of components of readiness indicate that among the most difficult for preschool students was mastering such communicative competencies of the social component of readiness as establishing working relations with the teacher, and upholding one's own point of view in situations of disagreement with other children. Cognitive readiness, self-representation, and the skill of controlling of aggressive manifestations were regularly formed.

The developmental preschool approach has better school readiness outcomes in personal components and voluntary behavior regulation.

This approach develops better communicative skills, which can be interpreted as an effect of promoting cooperation. Children in the developmental approach groups need to reach agreement in order to achieve success in experimental activity, in story creation, in constructing, etc.

A higher self-conception in the developmental approach groups is provided by educational practices that foster children's freedom in choosing how to resolve issues, that encourage originality and creativity, that take into account individual pace and other features of the psyche. Therefore, children are faced with the need to reflect upon their desires, capabilities, and limitations.

Higher development of voluntary regulation of behavior contributes to mediating the development of universal skills, mastery of mental tools, and frequent play in groups using the developmental approach.

A consolidated body of research shows that early childhood education provides a crucial foundation for future learning by fostering the development of cognitive and non-cognitive skills that are important for success later in life.

It is well known that access and involvement are not a guarantee of high-quality preschool education, so indicators of the quality of early childhood education are receiving greater research attention (OECD, 2017). According to recent research, a balanced curriculum, organization of the teacher's time, and ratio of children to teaching staff can strongly influence child development (Huntsman, 2008).

The present research elaborated the concept of preschool education quality and demonstrated certain benefits of the developmental approach (fostering children's initiative, an equitable teacher-child relationship, taking into account children's individual characteristics). This is consistent with the data that argues that offering children problem-oriented tasks is much more beneficial than giving them the correct answers and full information to learn (Shian et al., 2017).

An emerging body of research highlights certain effective transition practices. It is suggested that preschool curricula have a positive impact on child development and school readiness (OECD, 2017). Our research allows us to clarify what kind of curriculum is more beneficial in achieving school readiness and a smooth transition from preschool to school.

Conclusion

School readiness is assumed to include child readiness and societal readiness. The readiness of schools and especially of preschools is one of the most important societal components of school readiness.

A connection between the preschool's approach and children's school readiness has been shown.

Children who attend a preschool with the developmental approach demonstrate a higher level of personal school readiness: They are able to ask for help, to coordinate creative intent with peers, and to empathize with them. Their level of self-consciousness is higher than that of their peers who learn under the traditional approach.

Also, they demonstrate greater voluntary readiness for school: They easily follow rules and adults' instructions, and keep their aggressive reactions under control.

In our opinion, this is because the developmental preschool approach is oriented towards preschoolers' needs and abilities, provides greater equality in teacher-student relationships, and takes into consideration the child's individual characteristics. The teacher encourages children's initiative and independence. These conditions can be evaluated as features of an outstanding societal (in particular, preschool) school readiness. They promote a high level of child school readiness.

The traditional approach does not provide personal and voluntary readiness as successfully as the developmental approach does. Children who attended a preschool with the traditional approach demonstrated lower levels of asking for help,

coordinating creative intentions with peers, empathy toward peers, self-consciousness, following rules and an adult's instructions, control of aggressive reactions, awareness, and figurative thinking. It may be explained by a lack of children's independence, teachers' authoritative communication style, and lack of playtime.

Meanwhile, these children demonstrated a higher level of verbal-logical reasoning. In our opinion, this is because the teachers were using traditional school-type learning methods. Therefore, children are familiar with math, verbal, and logical tasks.

In summary, we can conclude that the traditional and developmental approaches both provide some components of children's school readiness. However, the developmental preschool approach has higher outcomes because it fosters children's initiative, an equitable teacher-child relationship, and takes into account children's individual characteristics.

The results we obtained show the potential of not only a specially organized and targeted training, but also of the environment in the pre-school organization.

In addition, in the future it is necessary to consider not only the impact of pre-school, but also of educational practices in the family.

Nevertheless, in conclusion it is necessary to emphasize once again that a flexible preschooler-friendly environment, where partner communication conditions between children and adults have been created, contributes to an effective transition to the first grade.

Limitations and further directions

The major limitation of our study was the small number of participating children, especially from Russian cities other than Moscow; therefore, the results should be considered with caution. In addition, preschool infrastructure, corporate culture, staff educational level, and personal features may also influence children's school readiness and have to be taken into account.

Analysis of the approach to preschool is not complete if we leave out some widely used curricula (in Moscow there are a lot of them, for example, "Childhood", "Springs", "Rainbow"). These curricula may contain highly beneficial content. This limitation could be overcome by analysis of a significant number of preschool settings, including in different regions of Russia.

Another limitation is that the research of the two different approaches was focused only on their theoretical framework, child-teacher interaction analysis, whereas information about equipment, toys, and furniture available in the classes was excluded. Also, the research overlooked the corporate culture of preschool settings, relations among staff, established traditions, and personality characteristics of teachers. All these features may strongly affect students' achievements and the way the teacher evaluates them.

A huge body of articles indicates that parents' educational level and child-rearing style play a crucial role in child development and well-being. We did not analyze the socio-demographic status of the families and parental pedagogical practices or beliefs.

In the future, it would be interesting to examine how family-related factors affect children's school readiness.

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