Forecasting as a resource of socialization of children with speech disorders

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Abstract. The ability of children to predict the development of events is considered by many Russian and foreign scientists as one of the key resources for their social adaptation. The success of mastering social anticipatory models by children affects their success in communication, their communicative flexibility, and the variability of communication tools they use depending on the context and qualities of the subjects of communication. The purpose of this research was to identify the relationship between forecasting capability and indicators of successful socialization in preschoolers with speech disorders.

The study involved 54 children aged 5-7 years with a general speech underdevelopment of I-IV levels who attend preschool educational institutions of Russia. The following methods were used: "Prognostic stories" (Akhmetzyanova, Artemyeva), "Try-to-Guess" (Peresleni), "Emotional faces" (Semago), "Methodology for studying the compliance of a preschooler with the rules of a normative situation" (Bayanova, 2015), "Pictures" (Smirnova, 2005).

We have identified such features of forecasting activity of preschoolers with speech pathology as a violation of the mechanisms of memorization and "reading" information from memory with intact mobility of thought processes; difficulties in predicting emotions in future situations; insufficient development of cognitive function of forecasting activity.

The empirical study confirmed close correlation between indicators of forecasting and socialization: forecasting actions, emotions, level of verbalization and the use of speech and language means in forecasts are associated with communicative competence of preschoolers. Forecasts of actions depend on the maturity of children's self-control and forecasts of emotions are influenced by the maturity of children's self-control and self-service skills. The study allows us to suggest the need for creating special classes for children with speech disorders aimed at developing their ability to anticipate future events and successful social behavior.

Keywords: Forecasting, Socialization, Children, Preschool age, Speech disorders.

1   Introduction

Difficulties in understanding and mastering the norms and rules of social interaction make it difficult for a child with developmental disorders to socialize and adapt to new social conditions. Successful socialization of modern preschoolers with speech disorders is hampered by the lack of free communication between children and little experience in their interaction with peers and adults. Scientists consider the development of the ability to anticipate events as one of the key areas of the socialization process. The ability to anticipate itself indicates a good level of orientation in reality, as well as a high level of the development of its cognitive and emotional-personal components [1].

Intensive development of forecasting capability in older preschool age makes it an important resource for positive socialization of children. The success of mastering social anticipatory models by children affects their success in communication, their communicative flexibility, and the variability of communication tools they use depending on the context and qualities of the subjects of communication. [2]. According to I.M. Feigenberg, probabilistic forecasting plays essential role in almost all situations of human activity [3]. Kalyuzhin suggests that the mechanism of emotional anticipation of the result appears on the fourth year of a child's life and represents itself in the development of the ability to emotionally anticipate the results of one's own actions and actions of other people and to activate past experience, where the experience of the future and the past – as something relevant to a corresponding emotional state – acts as a specific phenomenon of emotional regulation [4]. Martin-Ordas, G., who studied the ability of preschoolers to anticipate current and future needs, concluded that at the age of 3 to 5 years, children develop the ability to plan their own and others' future needs; however, they have great difficulty forecasting future needs that conflict with the current ones [5]. Kinsbourne & Scott note that anticipation is an integral constructive characteristic of the brain; their study showed that by 30 months of age, the ability to anticipate transcends the boundaries of immediate objects of reality and becomes a part of the field of language objects (i.e. words) [6]. Skuse and et al. suggest that the socio-communicative deficit of forecasting is important for adapting the behavior of children in school [7].

Speech is the basis for the formation of child's social connections with the world, and if it is disturbed, these connections will not be formed well enough. Unlike their peers with no speech pathologies, preschoolers with speech disorders are more closed off and have less balanced nervous processes, they feel more stressed working in a team and are less adapted to the conditions of existence in it [8]. The ability to predict, anticipate events and situations, determine their cause is considered one of the most important characteristics of cognitive-speech and social development of children. Preschoolers with a general speech underdevelopment are characterized by a disturbance of cognitive prerequisites of speech. They are also characterized by cognitive weakness and desegmentation of speech production, absence of its semantic integrity and structure; disadvantages of transmitting logical links of the plot; semantic inconsistency and incompleteness of the plot [9]. Studies conducted by A.I. Akhmetzyanova, T.V. Artemyeva, E.S. Viktorova, O.L. Lekhanova, O.A. Denisova show that in comparison with children whose speaking skills correspond to the age norm, children with general speech underdevelopment face difficulties with formation of correct forecasts [9, 10, 11].

Difficulties in understanding and mastering the norms and rules of social interaction, lack of free communication between children, little experience in interaction with peers and adults, low level of development of socio-prognostic skills make it difficult for a child with speech pathology to adapt to new social conditions and to successfully socialize. Children with speech disorders have social development problems such as low social mobility; poverty and stereotypical nature of social interaction with peers and adults; limited knowledge of human and national culture. Researchers of this issue revealed the features of forecasting activity of primary schoolchildren with normal development and with impaired vision, hearing, speech, and musculoskeletal system. They found that the mechanisms for anticipating the development of events play a major role in the process of socio-psychological adaptation of children with disabilities [1]. However, there is a clear lack of research devoted to the study of forecasting features of preschoolers with developmental disorders and correlation between forecasting and socialization in children with speech disorders.

Materials and methods

Participants

The study involved 54 preschoolers aged 5-7 years with general speech underdevelopment of I, II, III and IV levels who attend kindergartens of the Russian Federation. There were 26 boys and 28 girls. Parents gave permission to examine their children. The work with children took place in the morning primarily on an individual basis. As a rule, researchers required several meetings with each child for successful examination.

Materials

• The study of the ability of preschoolers to predict further development of events was carried out using the "Prognostic Stories" methodology developed by members of the Department of Psychology and Pedagogy of Special Education of Kazan Federal University.

• The study of the specifics of communication and interaction with peers and adults, social and emotional intelligence was carried out using N.Y. Semago's

"Emotional faces" technique (assessment of the adequacy, accuracy and quality of recognition of the emotional state) [12].

• Preschoolers' understanding of social norms and values was determined with the use of technique developed by L.F. Bayanova, T.R. Mustafina "Methodology for studying the compliance of a preschooler with the rules of a normative situation" ("Obedience, meeting expectations of adults"; "Safety"; "Self-care, hygiene"; "Self-control") [13].

• The study of the features of forecasting activity was carried out using the "Try-to-Guess" technique developedd by L.I. Peresleni and V.L. Podobodom [14].

• To identify children's communicative competence in communication with peers, we used the "Pictures" technique developed by E.O. Smirnova and I.A. Burlakova [15].

Research hypothesis

We assumed that preschoolers with speech disorders may have difficulties with forecasting future situations, which may be associated with difficulties in their social adaptation and insufficient level of development of social competence.

Research objective

To identify the relationship between forecasting capability and indicators of successful socialization of preschoolers with speech disorders.

2   The results of the study

In order to process the results of the research, the researchers used statistical program SPSS 21. In order to study the relationship between forecasting indicators and socialization indicators, the researchers used Pearson's Correlation Coefficient. The significance level of 0.01 was used.

Analysis of indicators of socialization and forecasting skills of preschoolers with developmental disabilities

Table 1. Quantitative indicators of the features of forecasting activity of preschoolers with speech pathology (using the "Try-to-Guess" technique)

Technique Indicators	Minimum м	Maximum м	Median	Standard deviation
Forecast Efficiency	1.00	3.00	2.30	.924
Maturity of regulation	2.00	3.00	2.69	.469
Reproduction of orders	1.00	3.00	1.89	.572
Forecasting Strategies	1.00	4.00	3.37	.977

The empirical research using the "Try-to-Guess" technique showed that preschoolers with speech disorders are characterized by low forecasting efficiency (M = 2.30), which reflects children's inability to keep their forecasts in memory, to compare them with the order of presented elements, as well as the low span of their voluntary attention. The "Maturity of regulation" indicator characterizes the level of the development of regulatory processes, stability of voluntary attention which may be assessed by calculating the number of "distraction" errors. High values for this indicator (M = 2.69) were found both in children who quickly identified the alternation order and made no mistakes before the presentation of the set, and in those

who could not identify the alternation order and did not make "distraction" errors, since almost all of their predictions were erroneous. The results on the "Reproduction of orders" indicator (M = 1.89) show that preschoolers with a general speech underdevelopment are characterized by having difficulties in reproducing the orders of alternation of the elements in three sets after the end of their presentation. 78% of children from the sample demonstrated the ability to carry out predictive activities using rational strategies that increase the likelihood of a successful solution to the forecasting task with a small number of erroneous predictions. 22% of children used irrational strategies as they could not identify the alternation order of elements of the sets II and III.

The results of the study of qualitative and quantitative characteristics of forecasting activity showed that forecasting skills of preschoolers with speech disorders are characterized by low efficiency, insufficient development of regulatory processes and selective attention, impaired mechanisms of "reading" information from memory with possibility of choosing rational forecasting strategies.
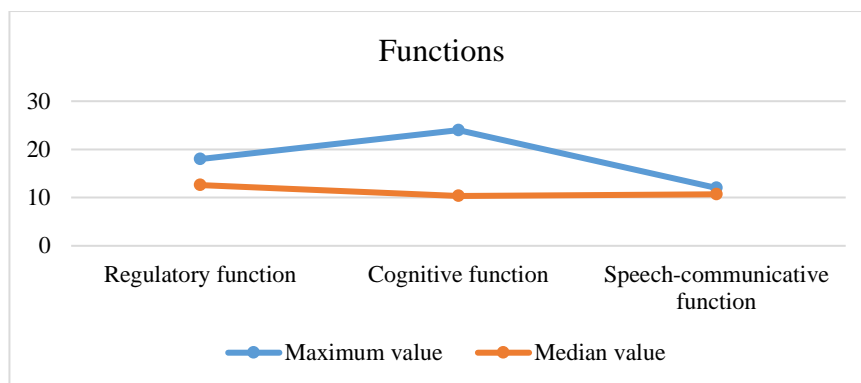

Figure 1. Average values for the functions of forecasting activity of children with speech disorders (according to the "Prognostic stories" method)

Evaluation of the regulatory (M = 12.60), cognitive (M = 10.34) and speech-communicative (M = 10.70) functions of forecasting activity showed that children with speech disorders can forecast future events quite effectively. The analysis of the data suggests that preschoolers with speech pathology are able to regulate their own activities and the activities of other participants in the anticipated situation. Forecasting future events, children plan possible strategies of behavior taking into account the norms and rules that are common in society. Preschoolers transmit the predicted image of the future using certain verbal models. Using verbalization, they make assumptions regarding the behavior of other people in future events as well as their speech and emotional states. Older preschoolers present information in a detailed form. In their answers, they use mainly lexically and grammatically correctly formed answers. Children with speech disorders often use simple common sentences in their answers, less often - single-word sentences. Forecasting possible future events, preschoolers often use future tense verbs and sometimes past tense verbs.

The lowest rates were found in the cognitive function. When predicting the future events, preschoolers with speech disorders often can offer only one option for the development of events, without going beyond the limits of a current situation. Their answers often have no logical reasons or explanations.

In order to determine the degree of preschoolers' compliance with speech pathology with the rules of a normative situation, we used the "Methodology for studying the compliance of a preschooler with the rules of a normative situation" developed by L.F. Bayanova, T.R. Mustafina [13]. Cultural congruence of preschoolers was assessed in accordance with four substantive factors: "Obedience, meeting expectations of adults," "Safety," "Self-care, hygiene," and "Self-control." The results of the empirical study of indicators of socialization showed that preschoolers with speech disorders are characterized by a low level of compliance with the rules of a normative situation.

The results of the study of recognition of emotional states allow us to conclude that preschoolers with speech disorders more often correctly recognize such emotional states as affability, surprise, anger and shame. The least familiar words for children were the ones denoting the emotions of joy, fear and resentment. Children with general speech underdevelopment are characterized by a uniform and primitive description of emotions which shows difficulties in verbalization of emotional states, insufficient identification of emotions.

The study of the communicative development and interpersonal relationships of preschoolers showed that preschoolers with speech disorders are characterized by an insufficiently high level of communicative competence. A significant part of children demonstrate either communicative helplessness and the lack of independence, or a tendency to aggressive behavior which manifests itself in the difficulties in finding a common language with peers, unwillingness to take into account the interests of the opponent in case of a conflict, and inability to independently solve problem situations.

The relationship between forecasting capability and socialization indicators in preschoolers with developmental disorders

Table 2. The relationship of forecasting indicators and indicators of socialization in preschoolers with speech pathology

Methodology Indicators		Cultural congruence				Communicative competence	Emotional faces
		Obedience	Safety	Self-service	Self-control		
Reproduction of orders		.444*					
Action forecast	Total points				.586**	.607**	
	Organized Activities		-.476*		.487*		
	Free				.611**	.733**	

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	Activities						
	Child-parent		-.455*				
	Child-adult				.488*	.682**	
	Child-child			.521*	.590**	.512*	
	Independent answer				.548*	.601**	
	With a leading question						-.749**
	With a hint that has options				-.540*		
Statement forecast	Total points						
	Organized Activities		-.542*				
	Child-adult						
	With a leading question					.486*	-.473*
	With a hint that has options				-.543*	-.611**	
Emotion forecast	Total points			.787**	.645**		
	Organized Activities			.565**	.455*		
	Free Activities			.767**	.637**		
	Child-parent			.657**	.564**		
	Child-adult			.552*	.449*		
	Child-child			.641**	.503*		
	With a leading question			.781**	.697**		
Functional characteristics	Optimistic / Pessimistic attitude				.468*	.455*	.503*
	Detailing / generalization				.529*	.615**	

	Max / Min verbalizati on				.534*	.730**	
	Regulatory function						.487*
	Speech-communic ative function				.537*	.678**	

The results of the research show the ability to predict actions in a future situation by preschoolers with speech pathology is associated with self-control (r = .586 **) and with indicators of communicative competence in communication (r = .607 **). Cultural congruency indicators such as "self-care" (r = .787 **) and "self-control" (r = .645 **) influence the way preschoolers with speech disorders predict emotions and feelings. The speech-communicative forecasting function in preschoolers with general underdevelopment of speech is associated with communicative competence (r = .678 **) and with self-control (r = .537 *). The regulatory function of forecasting in children with speech pathology is associated with the ability to distinguish emotions (r = .487 *). The success of order reproduction in children with speech disorders depends on the degree of obedience (r = .444 *).

3 Discussion and conclusions

The experimental research revealed the features of forecasting capability of preschoolers with speech disorders. The analysis of the data collected allows us to conclude that the most disturbed mechanisms in children are memorization and "reading", and the most preserved one is the mobility of thought processes which is confirmed by the ability of preschoolers to choose rational forecasting strategies. The analysis of structural components of forecasting showed that preschoolers with speech disorders are more successful in forecasting actions than in forecasting statements, and the biggest difficulties are associated with forecasting emotions. The analysis of functional characteristics of forecasting revealed that the most developed functions in children are the regulatory and speech-communicative ones while the lowest indicators were found in a cognitive function.

The results of the study of the qualitative and quantitative characteristics of forecasting activity showed that forecasting capabilities of preschoolers with speech disorders are characterized by low forecasting efficiency, insufficient development of regulatory processes and selective attention, impaired mechanisms of "reading" from memory with possibility of choosing rational forecasting strategies. Thus, the research confirmed the results of studies by Martin-Ordas, Suddendorf, Atance devoted to difficulties with forecasting future events in children [5,16,17]. Akhmetzyanova's studies confirm the lack of forecasting function in children with developmental disorders [10].

The results of the empirical study of indicators of socialization showed that preschoolers with speech disorders are characterized by a low level of compliance with the rules of a normative situation. Preschoolers with general underdevelopment

of speech are unable to adequately control their actions, subject them to certain rules of social interaction, which is most often manifested in resistance to restrictions set by adult and in difficulties in controlling their own emotional reactions. The results of the research are confirmed by the studies conducted by O.A. Denisova which state that children with disabilities – due to certain characteristics of their development – face difficulties in mastering the above groups of sociocultural experience. It is emphasized that children with speech disorders have difficulties in free communication with people, especially with those who do not belong to family members or caregivers [11].

The results of the correlation analysis show a close relationship between the regulatory, speech-communicative forecasting functions and indicators of socialization. Considering children with speech disorders, the regulatory function of forecasting is associated with the ability to distinguish emotions. The speech-communicative forecasting function in preschoolers is associated with a general underdevelopment of speech with communicative competence and with self-control.

The study allows us to argue that the developed prognostic ability of children allows you to interact with peers and adults, to find a productive solution to the conflict situation, since in this case they can successfully predict their behavior and the behavior of other participants in the presented situation.

Conflicts of Interest: The authors declare no conflict of interest.

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