

Forecasting in the Environment of Personal and Situational Anxiety of Orphan Children

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Abstract

One of the important factors for successful socialization of children is developed prognostic activity which may be considered as an activity which is adequate to the manifestation and formation of predictive competence. Children living in family deprivation conditions have problems in communication that can be caused both by negative experience and lack of the ability to objectively assess situations, difficulties in differentiating emotions, in predicting their behavior and the actions of other people. Our research is aimed at studying the specifics of the predictive capabilities of orphans depending on the level of their anxiety. The sample consisted of orphans (20 people) and children raised in families (20 people). We discovered the specificity of correlation between the level of anxiety and predictive competence in the general sample of orphan children, which proves that a high level of general school anxiety and the fear of not meeting the expectations of people make orphans form their predictions within a narrow social context, constructing passive position in predicted situations – that is, in their forecasts, children act as passive subjects who are not involved in resolving the situation. The abundance of greats in the forecasts of orphans in the total sample is explained by their fear of the situation of knowledge testing and by general anxiety at school. The specificity of forecasting in orphans with high and medium levels of general anxiety lies in the invariance of forecasts which determines the risk of deviations as well as in the dominance of infantile behavior patterns in predicted situations.

Keywords: forecasting, anxiety, orphan children.

1. Introduction

1.1 Prognostic capability

In modern psychology, prognostic competence is considered as the ability to anticipate the course of events, one's own actions and the actions of other people, to plan activities based on an adequate probabilistic forecast (Platonov, 1984). The degree of development of prognostic skills reflects the level of development of the human psyche as a whole.

There are several classifications of predictive competence based on various criteria: specific and non-specific, everyday and professional, arbitrary and definite, conscious and unconscious.

Forecasting has three important functions in human life – cognitive, regulatory, and communicative. The cognitive function of forecasting is closely related to such mental processes as perception, memory, attention, and thinking. It provides the selectivity of perception, selecting

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the information which will be used as the basis for making forecasts in the future. The regulatory function of forecasting provides control and regulation of behavior and human activity based on the constructed model of the future. The communicative function of forecasting allows anticipating actions, deeds, and emotional states of the people around us. The above functions always act together in the process of forecasting activity (Ahmetzyanova & Saifullina, 2018).

Forecasting processes have probabilistic nature, since there is a probabilistic connection between the phenomena of the surrounding world. Probabilistic forecasting is defined as anticipation of the future, which is based on the probabilistic structure of past experience and information about the current situation (Blinkov, 1977).

Predictive skills are of great importance in human life, since there is a certain representation of the results that one expects to receive upon the completion already at the beginning of any activity. This proves that a person is characterized not only by the preservation of past experience and reflection of the present, but also by an active mastery of the future perspective (Nichiporenko & Mendelevich, 2006).

Prognostic skills are formed and developed in the process of individual human development. Already in the first year of life in children, anticipatory capabilities manifest themselves in the improvement of selectivity in the reflection of external influences and spatiotemporal anticipation of events when interacting with the environment (Sergienko, 2006). At two, three years children develop the ability to set goals independently; in six years, they start to develop prevision. At this age children also learn to develop forecasting skills based on a sequence of signals – they begin to take into account the incoming information in decision making and behavior (Lysyuk, 2000; Regush, 2003).

Seven-year-old children tend to plan their activities verbally, and children of nine years old are able to follow their plan while keeping it in mind. At the age of eight years, children experience the transition to assessing the likelihood of various factors, and at 12-15 years old, adolescents begin to consider the actual moment as a particular case of a potentially possible future (Bazylevich, 1994).

The ability to successfully predict is not assigned to a person from birth as it develops, forms, and strengthens in person's experience depending on a number of factors, including social conditions of upbringing and development.

1.2 Family deprivation

Early mental deprivation of such basic human needs as love, acceptance and respect is the factor that subsequently determines the formation of orphans' personality. Orphans are characterized by the impoverishment of emotional experiences, inability to recognize and accurately differentiate both their emotions and feelings, and the emotions and feelings of people around them. Children raised in family deprivation conditions have a low level of self-esteem and self-respect caused by the blocking of the need for love and respect. Low self-esteem and self-respect in the future can cause all sorts of personality disorders and behavioral disorders, up to asocial personality development.

Children who are brought up in residential institutions are characterized by distortions in communication. This may be explained several reasons: they have an acute need for attention, affection and positive emotional contacts; lack of satisfaction of this need due to insufficient amount of appeals from adults to children; emotional poverty and monotony of these appeals; frequent turnover of adults who interact with children; transfers of students from one group to another, from one institution to another.

Difficulties in the process of communication and interaction with both adults and peers have a negative impact on orphans' affective sphere. This leads to an increase in the anxiety index, emotional breakdowns when performing more complex tasks, increased sensitivity to comments, and fear of the evaluation situation in the future (Koneva, 2009). Younger schoolchildren raised in orphanages are characterized by two leading symptom complexes – "anxiety towards adults" and "hostility towards adults" (Dubrovina, 2005).

There are two key points in communication of children living in conditions of family deprivation: the intensity of this need on the one hand, and the underdevelopment, primitiveness of communication forms on the other. Anxiety indicates dissatisfaction of the need for acceptance by adults while hostility indicates inadequacy of the forms of interaction with adults.

One of the most important factors for the successful socialization of children is a well-developed prognostic activity which may be considered as an activity adequate to the manifestation and formation of predictive competence. Predictive competence is formed in the process of predictive activity implemented in various areas of life: communication, gaming and learning activities, family, personal interaction, etc. (Artishcheva & Sadikova, 2018). Forecasting includes the development of a strategy for one's own behavior in a given situation, as well as anticipating the behavior of other people and the development of the situation in the future.

Children living in family deprivation conditions have problems in communication that can be caused both by negative experience and a lack of formation of the ability to objectively assess situations, difficulties in differentiating emotions, in predicting their own behavior and the actions of other people. They are less successful in resolving any conflicts that arise in the process of communication or interaction with others than their peers living in families. All this causes a feeling of anxiety which becomes personal. Children who are brought up in family deprivation conditions and have difficulties in interacting with other people, personal traits and features of the emotional-volitional sphere may have poorly pronounced predictive skills.

1.3 Purpose of the study

To study the specifics of prognostic capabilities of orphans depending on the level of anxiety.

- 2. Research methods
- 2.1 Research participants

40 children aged 8 to 9 years old participated in the study: 20 orphans of primary school age from an orphanage (8 boys and 12 girls); 20 children of primary school brought up in families (10 boys and 10 girls).

2.2 Research methods and techniques

The study used the following methods: the method of studying the features of the prognostic activity called "Try to guess" (L. I. Peresleni; V. L. Podobed); Predictive capability in situations of potential or real violation of social norms; Phillips school anxiety diagnostic technique; The anxiety test (R. Temple, V. Amen, M. Dorkey).

2.3 The course of the research

The evaluation of the data collected involved qualitative and quantitative analysis. We allied correlation analysis using the Pearson's linear correlation coefficient. Mathematical calculations were carried out using the SPSS-16 program. The results of the study for further analysis were distributed as follows:

- data related to prognostic capabilities of children with high and medium levels of general anxiety;
- data related to prognostic capabilities of children with low, medium and high levels of school anxiety.

3. Results

3.1 The structure of predictive competence of orphans with high levels of general anxiety

The analysis of empirical data helped to discover that children raised in family deprivation conditions have medium and high levels of personal anxiety. We compared the specifics of forecasting in children depending on the severity of their anxiety (Figure 1 and Figure 2).

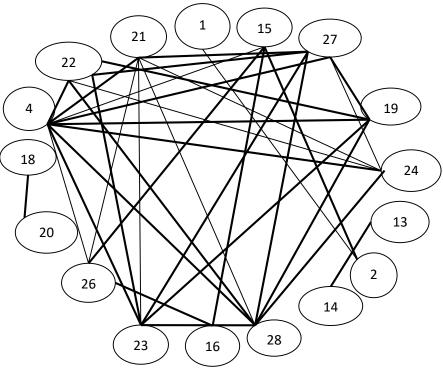


Figure 1. The structure of the predictive competence of orphans with a high level of general anxiety

Legend: — direct relationship between indicators, ----- inverse relationship between indicators; — relationship at the level of significance $p \le 0.05$; — communication at the level of significance $p \le 0.01$;

Indicators: 1 - the number of wrong predictions; 2 - the number of distraction errors; 4 - general level of prognostic capability development; 13 - the risk of deviations; 14 - the prediction has a mindset to prosocial / asocial behavior; 15 - mindset to mature / infantile forecasting strategies; 16 - optimistic / pessimistic attitude to build the expected image of the future; 18 - forecast variability / invariance; 19 - detailedness /

generalization of the forecast; 20 - wideness / narrowness of the social forecasting context; 21 - rational / irrational forecast; 22 - maximum / minimum forecast verbalization; 23 - fullness / poverty of verbal means; 24 - presence / absence of participants in the forecast; 26 - regulatory function of forecasting; 27 - cognitive function of forecasting; 28 - speech-communicative function of forecasting.

75% of orphans have a high level of anxiety. Figure 1 shows the data revealing the specifics of forecasting at a high anxiety level. The structure-forming indicators are: the general level of development of prognostic capability, speech-communicative function, cognitive function of forecasting, rational / irrational forecast, maximum / minimum forecast verbalization, fullness / poverty of speech-language means.

The general level of the development of predictive capability correlates with such indicators as forecast detailedness / generalization, rational / irrational forecast, maximum / minimum forecast verbalization, fullness / poverty of speech-speaking means, presence / absence of participants' statements, cognitive and speech-communicative function of forecasting, regulatory function of forecasting and mature / infantile forecasting strategies.

The speech-communicative function of forecasting has correlations with the detailedness / generalization of the forecast, fullness / poverty of the speech-language means, presence / absence of the participants' statements, cognitive function of forecasting, rational / irrational forecast.

The cognitive prediction function has a correlation with such indicators as forecast detailedness / generalization, rational / irrational forecast, maximum / minimum forecast verbalization, fullness / poverty of speech / language means, speech-communicative function, presence / absence of participants in the forecast.

The rational / non-rational forecast has a correlation with the general level of development of prognostic capabilities, fullness / poverty of speech-language means, presence / absence of statements by the participants, regulatory, cognitive and speech-communicative functions of forecasting.

The verbalization of a forecast is interconnected with the general level of the development of prognostic capabilities, detailedness / generalization of forecasts, fullness / poverty of speech-language means, presence / absence of participants in the forecast, cognitive and speech-communicative function of forecasting.

The meaningfulness of speech-language means correlates with the following indicators – general level of the development of prognostic capabilities, detailedness / generalization of forecasts, rationality and verbalization of a forecast, cognitive and speech-communicative function of forecasting.

Thus, the above-described correlations indicate that highlighting a large number of components of predicted situations, building an image of the future based on identifying significant characteristics of the situation, fullness of verbal predictions, age-appropriate level of proficiency in using lexical, grammatical and syntactic structures determine a high level of the development of general prognostic capability in this subgroup of orphans and, accordingly, the effective implementation of regulative, cognitive, speech-communicative forecasting functions. Difficulties in keeping their own forecasts in memory, low distributability of voluntary attention of orphans with a high level of general anxiety is associated with the instability of voluntary attention, which entails a large number of "distraction" errors in forecasting. It is worth to note that the instability of voluntary attention can be determined by neurodynamic disorders which express themselves in the insufficiency of the regulatory function of the frontal areas of brain.

3.2 The structure of predictive competence of orphans with medium level of general anxiety

It was discovered that among all the subjects 25% of orphans have an average level of personal anxiety. In Figure 2 we see that the structure of forecasting of children with less expressed anxiety is less organized and divergent in nature – it is formed mainly by negative connections of a low significance. Structural indicators are *attitudes to prosocial/asocial behavior*, the risk of deviations, maximum/minimum forecast verbalization.

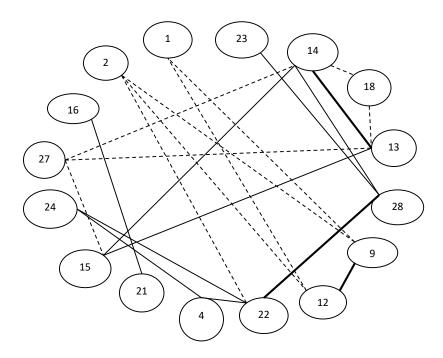


Figure 2. The structure of the predictive competence of orphans with a medium level of general anxiety

Legend:—direct relationship between indicators,—inverse relationship between indicators;—relationship at the level of significance $p \le 0.05$;—communication at the level of significance $p \le 0.01$;

Indicators: 1 - the number of wrong predictions; 2 - the number of distraction errors; 4 - general level of prognostic capability development; 9 - attitude towards disease; 12 - extra-curricular situations; 13 - the risk of deviations; 14 - the prediction has a mindset to prosocial / asocial behavior; 15 - mindset to mature / infantile forecasting strategies; 16 - optimistic / pessimistic attitude to build the expected image of the future; 18 - forecast variability / invariance; 21 - rational / irrational forecast; 22 - maximum / minimum forecast verbalization; 23 - fullness / poverty of verbal means; 24 - presence / absence of participants in the forecast; 27 - cognitive function of forecasting; 28 - speech-communicative function of forecasting.

The presence of attitudes toward prosocial or asocial behavior in prediction is determined by cognitive and speech-communicative functions of forecasting, the maturity of behavioral strategies, the risks of deviations and the variability of forecasts.

The risks of deviations in children raised in family deprivation conditions are determined by maturity or infantilism of behavioral strategies, cognitive function of forecasting, attitudes to prosocial or asocial behavior, and variability of forecasts.

The general level of prognostic capabilities, the presence or absence of the participants' statements in the forecast, the speech-communicative function of forecasting and the number of distraction errors determine the degree of verbalization of the orphans' forecasts.

Thus, the correlation analysis of the study results concerning this subgroup indicates a high level of forecasting development in out-of-school situations and disease situations. In addition, the expression of readiness for socially approved, adaptive behavior that is age appropriate in predictions indicates a low risk of deviations in this subgroup of orphans. The development of verbal forecasts, the presence of the statements of the participants in predictions determines the high level of development of predictive capabilities. But at the same time, it is worth to note that the only scenarios for the development of predicted situations, the lack of alternative outcomes of events increases the risk of deviations in this subgroup of children, and the use of infantile behaviors that are not age-appropriate reduces the cognitive function of prediction. The instability of voluntary attention is related to the minimal verbalization of forecasts and the low level of prediction in out-of-school situations. Optimistic attitudes towards building the expected image of the future allows to build rational forecasts.

Comparing the data of the subgroups of children identified by the severity of personal anxiety, we can note the following things. Children have different models for constructing predictions depending on their level of anxiety. These models are formed by the interrelatedness of the prediction characteristics and structure-forming indicators which have different severity in the subgroups. But we have also revealed a structure-forming indicator which is common in forecasting and reflects the *degree of forecast verbalization*. In each subgroup, it forms positive correlations with a number of prediction characteristics. Given the specific nature of the forecasting process in children with high and medium anxiety, there is a general mechanism for ensuring a successful prediction – the extensiveness of a verbal forecast determined by to the presence of the participants' statements in the predictions, the development of the speech-communicative function of the forecast and the increase in the overall forecast level.

3.3 The structure of predictive competence of orphans with low level of school anxiety

Let us consider the specifics of forecasting in children brought up in family deprivation conditions depending on the severity of school anxiety. After processing the data, we could identify three groups: kids with low, medium and high levels of school anxiety.

45% of the total number of orphans have a low level of school anxiety. The structure of prediction in orphans with low school anxiety has a complex nature due to the large number of links between the characteristics of forecasting and has structure-forming indicators: the general level of the development of predictive capability, cognitive and speech-communicative forecasting functions, the presence / absence of participants' statements in the prediction.

It was discovered that structure-forming indicators have the same forecasting characteristics in their bundle. That is, it is possible to single out not only the structure-forming indicators, but also the correlation core which ensures successful forecasting. Key interrelatedness is formed by such characteristics as general level of the development of prognostic capability, rational / irrational forecast, fullness / poverty of speech-language means, cognitive, regulatory, speech-communicative forecasting functions, presence / absence of participants' statements in the forecast, maximum / minimum forecast verbalization, detailedness / generalization of forecast.

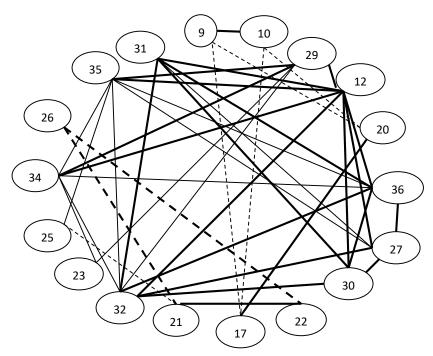


Figure 3. The structure of the predictive competence of orphans with a low level of school anxiety Legend: — direct relationship between indicators, — inverse relationship between indicators; — relationship at the level of significance $p \le 0.05$; — communication at the level of significance $p \le 0.01$;

Indicators: 9 - the number of wrong predictions; 10 - the number of distraction errors; 12 - general level of the development of prognostic capability; 17 - attitude towards disease; 20 - extra-curricular situations; 21 - the risk of deviations; 22 - attitude towards prosocial / asocial behavior in the prediction; 23 - mature / infantile forecasting strategies; 25 - constructing an active / passive position in a predicted future situation; 26 - forecast variability / invariance; 27 - detailedness / generalization of the forecast; 29 - rational / irrational forecast; 30 - maximum / minimum forecast verbalization; 31 - fullness / poverty of speech-language means; 32 - presence / absence of the participants' statements in the prediction; 34 - regulatory function of forecasting; 35 - cognitive function of forecasting; 36 - speech-communicative function of forecasting.

The above correlations indicate that a high level of proficiency in using lexical-grammatical and syntactic constructions, extensiveness of verbal predictions, identification of a large number of different components in the predicted situations, making forecasts with consideration of all the characteristics of situations and past experience determine high level of the development of general prognostic capability of orphans in this subgroup and effectiveness of all forecasting functions. In addition, the effective implementation of regulatory function of forecasting is determined by the fact that children prefer mature prediction strategies, that is, they prefer to demonstrate patterns of behavior that seem appropriate for a given age and social norms. Low distributability, the sustainability of voluntary attention reduces prognostic potential in out-of-school and disease situations. The fact that children think of themselves in the forecasts as of passives subjects increases the risk of deviations and destructive forms of behavior.

3.4 The structure of predictive competence of orphans with medium level of school anxiety

40% of the total number of orphans have a medium level of school anxiety. The forecasting structure is not integral – it is divided into several groups where some of them are solitary having only one link between two indicators.

Correlation analysis revealed significant direct relationships ($p \le 0.01$ **) between the general level of the development of prognostic capability and cognitive, speech-communicative forecasting functions, fullness / poverty of linguistic means. We have also revealed a direct significant correlation of the regulatory function of prediction with mature / infantile forecasting strategies, and an inverse significant correlation between the number of distraction errors and the maximum / minimum forecast verbalization.

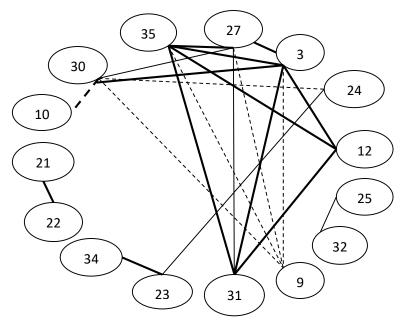


Figure 4. The structure of the predictive competence of orphans with a medium level of school anxiety

Legend: — direct relationship between indicators,—inverse relationship between indicators; — relationship at the level of significance $p \le 0.05$; — communication at the level of significance $p \le 0.01$;

Indicators: 9 - the number of wrong predictions; 10 - the number of distraction errors; 12 - general level of the development of prognostic capability; 21 - the risk of deviations; 22 - attitude towards prosocial / asocial behavior in the prediction; 24 - optimistic / pessimistic attitude towards building the expected image of the future; 25 - constructing an active / passive position in a predicted future situation; 27 - detailedness / generalization of the forecast; 30 - maximum / minimum forecast verbalization; 31 - fullness / poverty of speech-language means; 32 - presence / absence of the participants' statements in the prediction; 34 - regulatory function of forecasting; 35 - cognitive function of forecasting; 36 - speech-communicative function of forecasting.

Less significant inverse correlations ($p \le 0.05$ *) exist between the following indicators: the number of wrong predictions and the detailedness / generalization of a forecast, the maximum / minimum verbalization of the forecast, cognitive and speech-communicative function of forecasting.

In orphans with medium-level school anxiety, the level of development of general prognostic capability is determined by their ability to use lexico-grammatical and syntactic constructions, which in turn affects the performance of cognitive and speech-communicative functions of forecasting. And the preference for age-appropriate patterns of behavior determines the regulatory function of forecasting. It is also worth to note that the lower the stability of voluntary attention, the less detailed are the forecasts of children, i.e. forecasts are presented in the form of a one-word sentence. And the low distributability of voluntary attention entails the description of a forecast without highlighting the various components of the situation and the lack

of a description of feelings and relationships between the participants of the forecasts, i.e. representation of the image of the future in the form of an undifferentiated, syncretic picture, as well as short verbal forecast, and, accordingly, ineffective fulfillment of the cognitive and speech-communicative functions of forecasting.

3.5 The structure of predictive competence of orphans with high level of school anxiety

Orphaned children with a high level of school anxiety (15% of the total number of orphans) have a poorly organized forecasting structure which consists of two groups. All the indicators of the larger group are interconnected with 3-4 indicators, that is, all of them are structure-forming ones.

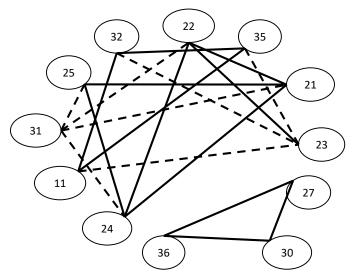


Figure 5. The structure of the predictive competence of orphans with a high level of school anxiety

Legend: — direct relationship between indicators, — inverse relationship between indicators; — relationship at the level of significance $p \le 0.05$; — communication at the level of significance $p \le 0.01$;

Indicators: 11 – the correctness of reproduction of orders of three sets; 21 - the risk of deviations; 22 - attitude towards prosocial / asocial behavior in the prediction; 23 - attitude towards mature / infantile forecasting strategies; 24 - optimistic / pessimistic attitude towards building the expected image of the future; 25 - constructing an active / passive position in a predicted future situation; 27 - detailedness / generalization of the forecast; 30 - maximum / minimum forecast verbalization; 31 - fullness / poverty of speech-language means; 32 - presence / absence of the participants' statements in the prediction; 35 - cognitive function of forecasting; 36 - speech-communicative function of forecasting.

The big group if formed by such forecasting characteristics as correctness of reproduction the orders of three sets, the risk of deviations, attitude towards prosocial / asocial behavior in the prediction, attitude towards mature / infantile forecasting strategies, optimistic / pessimistic attitude towards building the expected image of the future, constructing an active / passive position in a predicted future situation, the fullness / poverty of speech-speaking means, presence / absence of the participants' statements in the prediction, cognitive function of forecasting. All of them determine the activity of forecasting processes. Such characteristics as detailedness / generalization of forecast, maximum / minimum forecast verbalization, and the speech-communicative forecasting function represent another launching mechanism for forecasting.

Thus, the high level of the development of long-term memory determines the effectiveness of the cognitive function of forecasting, while the extensiveness of verbal predictions, highlighting multiple elements of the situation in a forecast, detailed description of the behavior and feelings of participants in the events ensures the effectiveness of the speech-communicative function of forecasting. However, it is worth to note that the preference of infantile behavior patterns that do not match the age decreases the effectiveness of the cognitive function of forecasting.

4. Discussion

The analysis of the correlation links between the studied parameters made it possible to reveal a certain specificity of the relationship between prognostic competences in orphan children. The study of correlations *in the general sample of orphans* has made it possible to establish that the a high level of general school anxiety in orphans makes them consider themselves in predicted situations as passive participants of the events that do not participate in resolving situations, as well making forecasts within a narrow social context with a limited number of participants. The fact that orphans assign themselves a passive role in their own forecasts is explained by their fear of not meeting the expectations of other people, by the great significance of other people's assessments and the fear of negative self-evaluations and evaluations of their own activities. General school anxiety, fear, negative experience of situations associated with evaluation of knowledge and achievements entails more detailed predictions, description of a large number of components of situations, behavior, feelings and relationships between participants in the predicted events.

Orphans with a high level of personal anxiety are characterized by the dependence of the general level of prognostic capability on making predictions based on identifying the most significant characteristics of situations, detailedness, detailed description of the many elements of predicted situations, detailed verbal predictions and a high degree of proficiency in linguistic means. Low distributability, instability of voluntary attention, difficulties in keeping their forecasts in memory reduce the quality of forecasting. Orphans with a medium level of personal anxiety are characterized by the following peculiarity: a high level of the development of prognostic capability in out-of-school situations leads to more effective predictions in situations of illness. The general level of the development of prognostic capability is determined by the extensiveness of verbal forecasts and the presence of the statements of the participants in the forecasts. The only scenario in the predicted situations increases the risk of deviations in this subgroup of children and the demonstration of infantile behavior patterns in forecasts reduces the efficiency of the cognitive function of forecasting.

In orphans with low and medium levels of school anxiety, the general level of the development of prognostic skills depends on making forecasts with consideration of the significant relationships of the situation and their own past experience, the detailedness of forecasts, good use of linguistic means. The fact that orphans prefer age-appropriate behavior patterns in their predictions determines the effective implementation of the regulatory function of forecasting. Consideration of oneself in predictions as a passive participant of the events who is not involved in resolving the situation increases the risk of deviations in children of this subgroup. *Orphans with a high level of school anxiety* are characterized by the preference of infantile behavior patterns inappropriate for their age which entails a decrease in the effectiveness of the cognitive function of forecasting. And the extensiveness and detailedness of forecasts ensure the effectiveness of the speech-communicative function of forecasting.

5. Conclusions

- (1) Most of the children living in residential type institutions are characterized by a high level of both personal and school anxiety;
- (2) We have discovered the specifics of the relationship between the level of anxiety and predictive competence in the general sample of orphans which consists in the fact that a high level of school anxiety and fear of not meeting expectations of people around them determine that the orphans build predictions within a narrow social context, construct a passive position in predicted situations, that is, in their forecasts, children act as passive subjects who do not participate in the resolution of the situation;
- (3) The detailedness of the predictions of orphans in the general sample is explained by their fear of the situation of knowledge testing and school anxiety;
- (4) The specificity of forecasting by orphans with high and medium levels of personal anxiety lies in the invariance of forecasts, which increases the risk of deviations and determines the dominance of infantile behaviors in predicted situations;
- (5) Orphans with low and medium levels of school anxiety are characterized by the demonstration of mature behaviors in their predictions that determine the effectiveness of the regulatory function of forecasting as well as taking passive position in predicted situations which entails the risk of deviations. Orphans with a high level of school anxiety are characterized by the prevalence of infantile behavioral models that reduce the effectiveness of the cognitive function of forecasting.

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The authors declare no competing interests.

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