Deficiency of Prognostic Competence in Younger School Students With Persistent Learning Difficulties

Anna Ivanovna Akhmetzyanova, Tatyana Vasilyevna Artemyeva
Kazan (Privolzhsky) Federal University, Institute of Psychology and Education

Natalia Vladimirovna Ryabova
Mordovia State Pedagogical Institute, Saransk

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Abstract

The problem of anticipation occupies an important place in psychological research. Through anticipation, a school student is able to control the learning activity; the mental processes acquire qualitative changes associated with the function of consciousness. In terms of forecasting development, the younger school age has a special place. Social responsibility, widening the circle and complicating the content of meaningful relationships with people raises the requirements for anticipating the consequences of their own actions and actions of younger school students. The aim of the research is to study experimentally the prognostic competence of junior school students with persistent difficulties in learning and identifying the specifics of their forecasting in important spheres of life for a child.

Materials and Methods: As a diagnostic tool, the author’s method “Ability to forecast in the situations of potential or real violation of social norms” was used. The study involved 80 primary 8-10 year old school students studying in the Republic of Tatarstan and the Republic of Mordovia.

Results: It revealed deficiency of cognitive and speech-communicative spheres of prognostic competence of junior school students with persistent difficulties in learning; the lack of forecasting in the field of learning, which includes educational cooperation and educational communication of the child; the predominance of the pessimistic attitude and generalization of the forecast, passive position of school students in the forecast future situations.

Discussion and conclusion: The data obtained in the study does not contradict the results of earlier studies, confirming that for schoolchildren with learning difficulties it is harder to predict the development of events in educational activities, and on the contrary, they were more successful in predicting relations with peers. Children with persistent learning difficulties find it more difficult to recognize the emotions of participants in the events, the forecast is more passive and pessimistic. The features of prognostic competence revealed in the study make it possible to form individual programs for the development of the prognostic abilities of schoolchildren with persistent learning difficulties.

Keywords: junior school student, learning difficulties, forecasting competence, functions of forecasting competence, criteria of forecasting competence, areas of forecasting competence, lack of forecasting.
1. Introduction

The importance of forecasting issues for psychology reflects the age frame in which the study of anticipation processes takes place (Nichiporenko, 2006). Various aspects of forecasting are studied in early ontogeny (Sergienko, 1997), at the younger school age (Akhmetzyanova, Artemyeva & Tvardovskaya, 2017), in adolescence (Ulanova, 2015), in senior school students (Karpov) and students (Akhmetzyanova, 2016; Artemyeva, 2017).

The contribution of Soviet/Russian science to the development of the phenomenon of anticipation was studied by Nadin (2015). Regulation of behavior by Regush (2003) cannot be carried out without constructing a model of the future, or in other words, an acceptor of the action results, which makes it possible to compare the obtained results of the subject action with the social norms of a certain group. This aspect of regulation is provided by the processes of anticipation (forecasting), which acts as a component of perception. The plan for constructing a holistic perception of objects determines the knowledge of the environment and the identification of social risks for forecasting events. In her research, Akhmetzyanova (2017) revealed that due to anticipation (forecasting) the junior school student is able to control educational activity; the act of communication is accompanied by the forecasting of one’s own behavior and actions of others. Sheeran et al. (2014) identified the elements of risk, such as risk assessment, perception, anticipatory and prospective emotions associated with changes in the intentions of people and their behavior. Forecasting with an incomplete set of factors was studied by Gusev and Okuniev (2017). The consequences of early processing of social anxiety on the cognitive symptoms are reflected in the study by Mills et al. (2014).

In modern psychological studies, junior school age is regarded as a stage of special significance (Gavrilyuk, 2006). On the one hand, it is extremely important for the subsequent development on the eve of the adolescent crisis; on the other, the increased demands of today’s society for the position of a school student reveal the drawbacks and deviations that are the result of development in preschool childhood (Matveeva, 2010). The increased interest of modern psychology to anticipation is determined by a variety of functions it performs in various spheres of life at different age stages. The younger school age has a special place in terms of the forecasting development. In the educational activity, there is a process of accumulation and systematization of knowledge, such neogenesis as self-analysis, internal plan of actions is formed.

In educational activity, there occur the most significant transformations of mental, primarily cognitive, processes of the child, as well as changes in the content and ways of interaction with others – the basis of personal development (Vlasova, 2016). The most important social institution in the younger school age is, along with the family, school; relations with school are the main form of the child’s relationship with society (Skvortsova, 2015). The social status of the school student determines the most important spheres of the child’s relationship. The teacher becomes a leading figure in the life world of the junior school student; he acts as the main representative of society, the bearer of social and cultural norms (Bayanova et al., 2016; Artemieva, 2016). The attitude of the teacher mediates the attitude toward learning, the relationship with peers within the school and to a certain extent outside its walls. Academic success of a junior school student, including assessment of his achievements by a teacher, becomes an important factor in the child’s family situation.

Theoretical analysis of the sources on the problem of forecasting (Nichiporenko, 2006; Akhmetzyanova, 2016), empirical studies (Akhmetzyanova, 2016, 2017) allows us to assert that prognostic competence of a junior school student consists of the ability to forecast in learning, in relations with the teacher, with peers, in relations in family, with adults, in relations realized in the Internet space, as well as in the attitude to their own health. Each of these areas of relations places special demands on anticipating the future, forecasting the consequences of their own
behavior and actions of other people (Denisova, 2012), and also provides special conditions for the implementation and formation of prognostic abilities.

Family relations, which change in connection with the child’s new social status of a school student, continue to be a significant sphere of socialization for a younger school student. Relations with adults are not limited to relations with teachers and adult family members; expanding social contacts in the circle of communication include other adults, the interaction with whom is still less controlled by the parents of the student. As a separate sphere of socialization of a modern child, we consider relations in the Internet space; this issue is the realization of the understanding of childhood as a specific historical category. For today’s junior school student, information technologies, which are the source of serious threats, present great opportunities for development. The considerable time that children spend on computers and smartphones requires considering computer games and relationships in social networks as a separate sphere of the junior school student (Akhmetzyanova, 2017).

2. Problem statement

At present, the study of prognostic competence in children of primary school age presents not only the research task, but also a social mission of scientists to model success of socialization processes, to prevent the initial process of the deviant behavior formation in primary school age children.

3. Research questions

We assume that junior school students with persistent difficulties in learning and mastering the academic programme will have deficiency of prognostic competence, especially in the field of educational activities. Probably, the cognitive function of prognostic competence will not be developed well enough, since forecasting is closely related to cognitive activity and the formation of a student’s forecast is largely determined by his cognitive development and cognitive potential.

4. Purpose of the study

The aim of the research was the experimental study of the prognostic competence of junior school students with persistent difficulties in learning and identifying the specifics of their forecasting in the important for a child spheres of life: learning, communicating with peers and adults, virtual communication, attitude toward illness, and family relationships. An important task of the study was to identify the specific features and criteria of prognostic competence in junior school students.

5. Research methods

5.1 Participants

An empirical study involved 80 primary school age pupils at the age of 8-10 years studying in the educational organizations of the Republic of Tatarstan and the Republic of Mordovia.

The first group consisted of 49 junior school students aged 8 to 10 years (26 boys and 23 girls) who study in educational organizations of Kazan and have no difficulty in mastering academic programme.
The second group consisted of 31 pupils (16 boys and 15 girls) aged 8 to 10 years studying at secondary school No. 18 in Saransk and having persistent difficulties in studying.

5.2 Materials

To study prognostic competence, we used the authors’ methodology “Prognostic Competence of a Junior School student” (Ability to forecast in the situations of potential or real violation of social norms). The methodology is multifunctional and can be used for screening, a detailed survey of prognostic ability for research purposes, as well as in the development of a strategy of psychological and pedagogical support for a younger student. The methodology allows to reveal the following:

- general level of prognostic ability development of a younger school student;
- the level of regulatory, cognitive and speech-communicative functions of prognostic competence;
- the ability to forecast in each of the six areas of the junior student relationship (attitude toward studying, communication with peers, relationships with adults, virtual communication, attitude to illness, relationships in the family);
- ability to forecast in educational (school) and non-educational (extracurricular) situations.

The methodology allows us to identify the criteria for prognostic competence in junior school students:

1. Reflection in the forecast of prosocial//antisocial behavior attitude.
2. Mature//infantile forecasting strategies attitude.
3. Optimistic//pessimistic attitude toward constructing the expected concept of the future.
4. Construction of the active//passive position in the forecasted future situation.
5. Variability//non-variability of forecasting prognosis.
6. Detailing//generalization of the forecast.
7. Width//narrowness of the social context of forecasting.
8. Rational//irrational forecast.
9. Maximum//minimum verbalization of the forecast.
10. Completeness//poverty of speech-language means.
11. Presence//absence of participants statements in the forecast.
12. Presence//absence of the future tense category in speech.

6. Results

We have not identified any difference in the regulatory function of prognostic competence among school students. Regulatory function reflects the emotional-motivational side of the future events forecast construction process, its implementation, thereby making it possible for a school student to prepare for the event.

We have identified the differences in samples using statistical analysis (t-Student’s test) for the following indicators of prognostic competence:

- cognitive function of prognostic competence (t=1.75).
School students with no difficulties in studying (M=30.70), who were more successful than school students with difficulties in studying (M=28), identified cause and effect in the situation of significant relationships, made generalized and evident conclusions and justified the forecast.

• **Speech - communicative function of the prognostic competence** of school students with no difficulties in studying (M=20.40) was also more successful (t=.90): school students fully described the situation, carried out a pragmatic and realistic forecast of possible events. For school students with difficulties in studying (M=18.12), the forecasts are represented by syllable sentences, in the form of simple sentences with poor vocabulary.

Table 1. Prognostic competence of junior school students in significant spheres of relationship

| Scales                      | Having no difficulties in studying (n=49) | Having difficulties in studying (n=31) | t(80) | p     |
|-----------------------------|------------------------------------------|---------------------------------------|-------|-------|
|                             | M      | SD     | M      | SD     |       |       |
| Attitude toward studying    | 10.53  | 4.01   | 8.85   | 1.89   | 1.89  | <.001 |
| Communication with peers    | 7.61   | 4.49   | 10.79  | 3.93   | 3.23  | <.001 |
| Relationships with adults   | 11.30  | 3.69   | 10.48  | 3.91   | .94   | .346  |
| Virtual communication       | 10.81  | 4.51   | 10.62  | 4.70   | .18   | .859  |
| Attitude to illness         | 9.79   | 4.28   | 11.29  | 3.68   | 1.60  | .113  |
| Family relationships        | 10.74  | 3.57   | 10.91  | 4.34   | .20   | .845  |

Statistically significant differences between schoolchildren in two spheres were revealed: in the sphere of attitude to studying and in the sphere of communication with peers.

**Attitude to studying.** Younger school students with no difficulties in studying were more successful in forecasting the development of situations in educational activity (t=1.89). Educational activity as a leading one in the younger school age determines the development of all aspects of the child’s psyche – cognitive, regulative, communicative. It includes educational cooperation and educational communication of a child with a teacher and other children.

**Communication with peers.** Forecasting in situations of interaction with peers not directly related to studying and school life, is more successful in students with persistent difficulties in studying (t=3.23).

The average values for health differ in groups of junior school students with no difficulties and with difficulties in studying (M=9.79 and M=11.29, respectively). However, these values are not statistically significant. School students with difficulties in studying are more likely to take care of their own health, protect it, and strengthen it.
Table 2. Criteria of prognostic competence of younger school students

|                                | Having no difficulties in studying (n=49) | Having difficulties in studying (n=31) | t(80) |
|--------------------------------|-----------------------------------------|---------------------------------------|-------|
|                                | M           | SD         | M            | SD       |       |
| Scales                         |             |            |              |          |       |
| Prosocial//antisocial behavior  | 9.93        | 2.10       | 11.13        | 1.38     | 2.80  |
| Optimistic//pessimistic attitude| 4.39        | 2.23       | 2.81         | 2.78     | 2.80  |
| Active//passive position        | 5.85        | 2.09       | 4.39         | 3.32     | 2.41  |
| Detailing//generalization of the forecast| 5.61 | 3.30 | 2.00 | 3.18 | 4.84 |

The statistical differences in the criteria of prognostic competence in younger school students at the significance level p<.001 are revealed.

The forecast of school students with difficulties in learning demonstrate readiness and orientation to socially approved behavior, adaptive behavior strategies (t=2.80).

In junior schoolchildren with no difficulties in learning, an optimistic attitude over building the expected image of the future (t=2.80) is prevalent. In the forecast a child sees himself, positions himself as an active subject in resolving the situation (t=2.41); the constructed image of the future is built on the basis of the situation analysis, a child distinguishes many components of the situation: describes behavior of the participants in the situation, their feelings and attitudes (t=2.68).

We have not identified the differences between school students by the criteria of mature//infantile forecasting strategies; variability//invariability of the forecast; detailing//generalization of the forecast; width//narrowness of the social context of forecasting; rational//irrational forecast; maximum//minimum verbalization of the forecast; richness//poverty of speech-language means; presence//absence of participants’ utterances in forecasting; presence//absence of the future-time categories in speech.

7. Discussion

The study of prognostic competence of younger school students made it possible to reveal forecasting specifics of students with difficulties in studying. It revealed that the differences relate to cognitive (Artemieva, 2016) and speech-communicative spheres of prognostic competence. As for the regulatory function, the junior students with difficulties in mastering the academic programme and students who master the academic programme successfully, are equally successful in controlling their own activities and activities of potential participants in the forecasted situation, using adaptive strategies of interaction (Akmetzyanova, 2017). School students with difficulties in learning identified cause and effect relationships in the interaction situations more successfully (Vlasova et al., 2016), they substantiated the forecast, put forward hypotheses about the future, taking into account the socio-cultural norms and expectations of other people (Bayanova et al., 2016), instantly forecasted their emotional states, adequately assessing the social context.

Differences between school students are also revealed in significant areas. Therefore, if junior school students with no difficulties in learning successfully forecasted the development of situations in the educational activity (Matveeva, 2010), interaction with the teacher and the development of the educational situation (Gavrilyuk, 2006), the school students with difficulties...
in learning turned out to be more successful in forecasting relations with peers. In their forecast, the school students with difficulties in learning demonstrate readiness and orientation to socially approved behavior, adaptive behavior strategies. There was no difference between school students in the areas of attitude to adults, virtual communication, family relationships and attitude to illness.

School students who cope with the academic programme and those who have difficulties in learning are equally successful in establishing social contacts, relationships with other adults, outside the school and in families; they are active users of social networks.

According to the criteria of prognostic competence, junior school students with difficulties in mastering the academic programme proved to be more successful in constructing pro-social (adaptive) strategies of behavior. However, according to three criteria, school students with no difficulties in learning showed better characteristics, their forecast is more optimistic, in significant interaction situations they take a more active position, more accurately describe emotions of participants in the situation and the details of what is happening.

8. Conclusion

The analysis carried out in the article made it possible to reveal the deficiency of cognitive and speech-communicative functions of prognostic competence in junior school students with difficulties in learning. Children had difficulties in establishing cause and effect relationships in significant situations, in justifying the forecast; it was more difficult for them to describe the situation in detail, to present a realistic forecast of possible events.

School students with difficulties in learning have the forecast deficiency in the sphere of learning, which includes educational cooperation and educational communication of the child with the teacher and with other children. Pessimistic attitude for building the expected vision of the future is prevailing; in the forecast, the child positions himself as a passive subject in resolving the situation; a vision of the future is viewed in general.

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No potential conflict of interest was reported by the authors.

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