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Psychological conditions for the formation of self-regulation in primary school

Психологические условия развития саморегуляции в начальной школе

Овечкина Е.А., Московский государственный психолого-педагогический университет, ekatlina@gmail.com

Ovechkina E., Moscow State University of Psychology & Education, ekatlina@gmail.com

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Keywords: self-regulation, inter-course, communication, organization of joint activities, second graders.

Аннотация. Проблема выявления психологических условий развития саморегуляции является одной из ведущих проблем в психологии младшего школьника. В качестве условия развития саморегуляции рассматривается упорядочивание коммуникации в учебной деятельности. Обосновывается, что в процессе коммуникации и общения происходит организация совместной деятельности, связанная с уровнем саморегуляции. В работе представлена методика диагностики саморегуляции. Разработаны нормативы, и выявлены уровни выполнения предложенной методики второклассниками. Установлено наличие корреляции между смысловой полнотой рассказа и уровнем продуктивности в предложенной методике. Полученные результаты позволили подтвердить связь саморегуляции и коммуникации. В дальнейшем предложенный подход может быть использован для разработки программы, направленной на развитие саморегуляции.

Abstract. The problem of identifying psychological conditions for the development of self-regulation is one of the leading problems in the psychology at a primary-school student. The ordering of communication in educational activity is considered as a condition for the development of self-regulation. It is proved that in the process of intercourse and communication, there is an organization of joint activity associated with the level of self-regulation. The paper presents a methodic for diagnosing self-regulation. There were developed standards and identified levels of implementation of the proposed methodology by second graders. A correlation between the semantic completeness of the story and the level of productivity in the proposed method was found. The obtained results confirmed the inter-connection between self-regulation and communication. The proposed approach can be used to create a program aimed at developing self-regulation.

Introduction. Self-regulation is the ability to independently regulate activities and behavior. It is required throughout a person's life, and plays a special role in professional activity, and in extreme situations. The problem of self-regulation was studied by L.S. Vygotsky [4], S.L. Rubinstein [17], C.S. Carver and M.F. Scheier [20] and many others. D.A. Leontiev indicated that the formation of the system of internal regulation is a prerequisite for the transformation of the individual to individuality [7]. V.I. Morosanova

defined self-regulation as a "Metaprocess that provides the self-organization of mental activity of humans as the subject of the actions, behavior, livelihood, and provides the integrity of his personality" [11, p.106].

The development of various activities requires a certain level of self-regulation. Self-regulation plays an important role in the development of educational activity of schoolchildren. Many authors noted that the initial stages of its formation during primary

school are the main ones [16]. There is a qualitative change in the social situation of development, and the social status of the child, when he enters the first grade, and his school life begins. He becomes a "student". In the child's life the most important psychological changes occur, requiring the formation of a new, higher level of self-regulation, because the volume of the studied material becomes larger, and the speed of its presentation becomes faster. A student has to regulate and organize his educational activity: to define and maintain the purpose of his work, to plan his actions, to implement them, to monitor and evaluate their implementation. The contradiction between these requirements and child's abilities determines the significance of the problem under study.

There is a significant number of studies of self-regulation at different levels of education (from pre-primary up to higher education) and studies that discuss the formation of self-regulation by means of a variety of disciplines (such as mathematics, foreign language) [3;15]. Another direction of research is the formation of self-regulation in children with various developmental features, such as autism [19]. There are studies of the communicative properties and stylistic features of teachers' self-regulation [10]. The communicative approach is used as a means of developing self-regulation through teaching students to communicate [9]. Several studies highlight various factors in the formation of self-regulation, among which communication is mentioned [6]. The existing studies emphasize the role of communication in the formation of self-regulation, which is the basis for successful education, but the mechanisms of this process are not disclosed. The attempt to consider the formation of self-regulation through the organization of communication in the educational activity of a primary school student determines the relevance of our approach.

Background of the issue. The variety of approaches to the definition and classification of self-regulation is described in the works of A.K. Bolotova and others [1]. O.Yu. Osadko describes two types of conscious self-regulation of activity: the activation self-regulation controls emotional states and functional systems of the body, and the organizational self-regulation controls the sequence of actions aimed at achieving the goal [14]. In this study, we are interested in self-regulation at the level of organizing actions within the framework of educational activity.

E.O. Smirnova, considering the problem of voluntariness and volition, identifies two approaches: from the standpoint of motivational conditioning of behavior and from the standpoint of conscious self-regulation of behavior. E.O. Smirnova considers voluntariness from the second position in the context

of mediated behavior and means of self-mastery [18]. L.S. Vygotsky pointed out that auxiliary means (speech) allow you to organize behavior, to control the behavior of another and your own. This is the essence of the process of voluntary regulation [4].

However, in modern linguistics, speech can be considered as a means of implementing communicative acts that actualize the meanings available to the communication partner [13].

A.V. Vdovichenko writes "devoid of communicative parameters, verbal facts lose the source of meaning formation, turn into an artificially created object of analysis" [2, p.56]. A.V. Vdovichenko considers communicative action as an actional phenomenon aimed at achieving changes in the external cognitive area. He defines actionality as the planning and implementation of certain transformations in the minds of the audience. In this way, the procedure of meaning formation in communication is an attempt to influence the speaker on the addressee.

P.Ya. Galperin pointed out, that a child learns to speak in a way that is understandable to another [5]. In this case, the internal side of the process is rebuilt. N.N. Nechaev notes when a speaker tries to achieve understanding of the addressee and uses new language means and new forms, he himself begins to understand more deeply [12].

Based on this, we consider communication (which in this case is synonymous with intercourse) as one of the psychological conditions for the development of self-regulation.

There are three sides in this intercourse: a communicative, perceptual and interactive side. The interactive aspect consists of the exchange of actions, the organization of interpersonal interaction. Interaction (interactive side), information exchange (communicative side), and relationships (perceptual side) are inextricably linked in intercourse and cannot be considered in isolation.

M.I. Lisina uses the concept of "communicative activity" along with the term "intercourse" [8]. Communication involves two-way activity: during communication a person initiatively influences his partner and at the same time perceives the influence of the other [8]. M.I. Lisina describes three functions of communication: 1) people's knowledge of each other, 2) the formation and development of interpersonal relationships and 3) the organization of joint activities. Communication as an organization of activity can include stimulating the actions of the partner, mutual coordination of actions, and changing the individual characteristics of the communication partner (such as aspirations and needs).

One of the aspects of communication is the management of the partner's actions (control,

correction, evaluation). The success of joint activities will be achieved by regulating the actions of the other in the process of communication. By regulating the actions of another, one's own actions is regulated, because regulation of the other's is impossible without prior "internal" regulation of oneself. The subject turns the means of communication to himself, and as a result he has a means of self-regulation. The regulation of the actions of the other, carried out in the process of communication, turns into self-regulation. It is a formation of ways of organizing one's own activity.

Thus, the features of the formation of self-regulation of a younger student can be identified with a special organization of communication in educational activity. For this purpose, an experimental study of the possibility of self-regulation of students and its connection with communication was conducted.

Materials and methods of research. 40 students of the second grade of a Moscow gymnasium took part in the study (among them 19 boys and 21 girls).

The "Patterns in triangles" method, expert assessment and the modified method "A story based on a series of pictures" were used.

The purpose of the developed method "Patterns in triangles" is to study the self-regulation of the younger student. Students received a form with printed triangles (35 figures in total). Within 5 minutes, students must invent and draw the maximum number of non-repeating patterns in triangles. Children must follow certain rules: 1) they need to use three lines in the pattern, and 2) each of these lines should touch the contours of the triangle. Only non-repeating patterns that correspond to these rules are taken into account in the evaluation of productivity. Successful completion is estimated with 1 point, and a half-repeat with 0.5 points (for example, if the child draws the same pattern in a mirror image in a row).

The level of self-regulation of children was assessed by teaching professionals. Teachers indicated that the children had a high, medium or low level of self-regulation.

The modified method "A story based on a series of plot pictures" allowed us to evaluate the ability of

children to make a detailed story, without missing key elements. In order to estimate the ability of children to compose the most understandable story, the assessment took into account the semantic completeness of the story.

Results. The IBM SPSS Statistics Subscription computer program was used to process the experimental data.

The data analysis showed that not all children are able to successfully complete the task "Patterns in triangles". The students' performance ranged from 1 to 26 points ($M = 12.34$, $SD = 6.60$). Obtained results were tested for the normality of the distribution and were confirmed by the Kolmogorov-Smirnov test ($p > 0.05$). Accordingly, we assume that the distribution of the level of productivity in the method "Patterns in triangles" of second-graders is representative and corresponds to the distribution of values in the general population.

Results of the implementation were tested for empirical validity by an expert criterion. For this purpose, a correlation analysis (according to Spearman) of the productivity of the implementation of the "Patterns in triangles" and expert assessments of self-regulation was carried out ($r = 0.359$; $p < 0.05$). The results show that the indicator "Productivity" and the level of self-regulation observed by teachers are interrelated. Perhaps the low level of correlation is due to the fact that teachers did not distinguish between activation self-regulation.

At the next stage of the analysis, the results obtained using the "Patterns in Triangles" method were divided into levels of self-regulation development: "high" – the result is equal to or greater than the 75th percentile (more than 18 points); "medium" – the result lies between the 75th and 25th percentiles (from 7.1 to 18 points); "low" – the result is equal to or less than the 25th percentile (less than 7.1 points).

The analysis of the levels of self-regulation showed that most of the children have an average level of self-regulation, and about an equal number of children have a low and high level. The results are presented in table 1.

Table 1. – Levels of self-regulation development

The level of self-regulation	Low	Medium	High
Number of children (%)	25	47,5	27,5

In order to confirm the hypothesis that the features of the formation of self-regulation can be identified with a special organization of communication, the method "Composing a story based on a series of plot pictures" was used.

Traditionally, this method is used to diagnose speech. In our study this technique was used to develop the communicative process, based on the concepts of speech and communication outlined above. For this purpose, the children were asked not just to compose

a story. The story should help another person to understand what happened as accurately as possible. It was assumed that such instructions would make the task for children more interesting and more meaningful. The correlation analysis (according to Spearman) showed a high significance of the relationship between the productivity of the "Patterns in triangles" and the semantic completeness when composing a story ($r=0.604$; $p<0.01$).

Thus, we can assume that there is a connection between the child's ability to independently regulate their actions and the ability to compose a story without missing elements. It is planned to expand this research and the sample, and consider the links between self-regulation and its components and various communication parameters to further test the hypothesis. It is possible that this relationship will be non-linear. It is planned to develop a psychological and pedagogical development program that promotes the development of self-regulation through a special

organization of communication in educational activity in the future.

Conclusion. The analysis of the literature allows us to consider the formation of self-regulation of the younger student through the organization of communication in joint activity. The ability to stimulate the actions of the partner and mutual coordination of actions in the process of communication requires a certain level of self-regulation development. The results of diagnostics of self-regulation of primary school students showed that students differ in the level of implementation of the method. A correlation was found between the level of self-regulation revealed by the results of the "Patterns in triangles" method and the level of self-regulation observed by teachers. The conducted empirical research allows us to confirm the hypothesis that there is a connection between self-regulation and the communicative aspect of joint activity.

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Сведения об авторе:

Овечкина Екатерина Александровна (г. Москва, Россия), аспирант, ФГБОУ ВО МГППУ, e-mail: ekatlina@gmail.com