

Analysis of the specifics of mnemonic processes' functioning in younger adolescents during the studying of literature

Análisis de los aspectos específicos del funcionamiento de los procesos mnémicos en adolescentes más jóvenes durante el estudio de la literatura

Angela Sergeevna DAMADAEVA [1](#); Zarema Soltanmuradovna AKBIEVA [2](#); Aida Ramazanovna SUTAEVA (MUSALAEVA) [3](#); Elmira Haji-Isaevna ISAEVA [4](#);

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ABSTRACT:

The aim of the article is to conduct the analysis of the specifics of mnemonic processes' functioning in school students during the studying of literature, and the analysis of interaction between literary development and creativity level at the lessons in literature studies and the results of students' working memory state diagnostics. The article presents the characteristic of school students' mnemonic processes during the studying of literature. The selected research techniques allowed evaluating the state of literary development, working memory development and verbal creativity in children in the age of younger adolescence. The results of the study and analysis of correlations between the level of literary development and creativity and the results of students' working memory diagnostics confirmed the possibility of drawing the hypotheses about the

RESUMEN:

El objetivo del artículo es realizar un análisis de los aspectos específicos del funcionamiento de los procesos mnémicos en los estudiantes durante el estudio de la literatura y el análisis de la interacción entre el desarrollo literario y el nivel de creatividad en las lecciones de estudios de literatura y los resultados de los estudiantes, Diagnóstico de estado de la memoria de trabajo. El artículo presenta la característica de los procesos mnémicos de los alumnos durante el estudio de la literatura. Las técnicas de investigación seleccionadas permitieron evaluar el estado del desarrollo literario, el desarrollo de la memoria de trabajo y la creatividad verbal en niños en la edad de la adolescencia más joven. Los resultados del estudio y análisis de las correlaciones entre el nivel de desarrollo literario y creatividad y los resultados del diagnóstico de

relationship between working memory and literary creative activity in younger adolescence. This is due to the fact that the results of the study might point to the fact that working memory functioning is an internal condition and mechanism of solving literary creative problems. The results also allow predicting the development flow of memory's regulative functions in the process of studying literature in school, which, in perspective, makes it possible to develop recommendations on organizing adolescents' education based on the revealed patterns.

Keywords: literary development, level of creativity, mnemonic processes.

la memoria de trabajo de los estudiantes confirmaron la posibilidad de extraer las hipótesis sobre la relación entre memoria laboral y actividad creativa literaria en la adolescencia más joven. Esto se debe al hecho de que los resultados del estudio podrían apuntar al hecho de que el funcionamiento de la memoria de trabajo es una condición interna y un mecanismo para resolver los problemas creativos literarios. Los resultados también permiten predecir el flujo de desarrollo de las funciones reguladoras de la memoria en el proceso de estudio de la literatura en la escuela, lo que, en perspectiva, permite desarrollar recomendaciones sobre la organización de la educación de los adolescentes a partir de los patrones revelados.

Palabras clave: desarrollo literario, nivel de creatividad, procesos mnémicos.

1. Introduction

Analysis of the data present in the literature allows making a conclusion that memory has a crucial role in literary activity, both in reading and in the process of independent creation of a literary text (Barsalou, 1992; Solso 2006). Mnemonic processes support perception, comprehension and interpretation of a fiction text on the basis of previous reading and life experience in general; they define the artistic nature of independently created texts and originality of images; they provide readers' emotional involvement in the content of a literary work. However, the conducted analysis also showed that the majority of studies (Fodor 1975; Holyoak and Morrison 2000; Pribram 1975) account for only reflective functions of memory and see its role only in passive preservation of past experience as a basis for the new. Regulative functions of memory in the process of literary activity remain undescribed.

As regards the literary activity (author's and reader's), we based our study on the theoretical research by M.M. Bakhtin, A.I. Nikiforova and V. Asmus, according to which, reading a literary piece is a specific dialogue between the author and the reader, "co-creation". During the process of perceiving a literary piece, a reader of high level of literary development, on the one hand, "grows accustomed" to the world created by the author and "enters" it, feeling direct compassion to the protagonist; on the other hand, he "exits" its limits and attempts to see the world "through author's eyes" by recreating author's way of seeing, author's perspective. Moreover, in the process of reading, a reader creates his own point of view on the symbolic world created by the author and compares it to the author's point of view.

Literary development of school students has been addressed by many modern researchers (Zhabitskaya 1972; Kudrina, Melink-Pashaev and Novlyanskaya 1988; Marantsman 1992) but this concept was defined for the first time by N.D. Moldavskaya as "a process of development of the skill of direct perception of verbal art, complex abilities to consciously analyze and evaluate the read material by following aesthetic criteria and artistic taste that was produced in school during the studying of the educational course in literature and in a wider interaction with art outside of the school" (Moldavskaya 1976). In our opinion, it is not sufficient to define only the skills of direct perception and analysis of a literary piece as the traits of literary development, because the development of a competent reader is impossible without author's work.

Experience of creating an artistic statement is a means that allows a reader to learn and comprehend the author's position in practice. In our opinion, such approach to the problem of literary development is highly promising because it reveals the actual opportunities for solving the problem of students' creative activity during the lessons in literature studies. Therefore, literary development can be defined as the process of developing a skill of independent analysis and evaluation of a literary piece from certain esthetic position, and creating oral and written statements of literary critical, fictional and non-fictional nature.

2. Methods

In order to evaluate the level of literary development in school students, we used the technique proposed by G.N. Kudrina (1990).

Participants in our study were 140 students in the age of 10-12 years. We analyzed one aspect of reading activity – ability to replicate and comprehend author’s position. Comprehension of author’s position was evaluated on the basis of readers’ independent interpretation of a text with the cross-sectional method.

Successful comprehension of author’s position is primarily defined by a reader’s orientation toward the essential characteristics of a work of fiction, in our case, a lyrical one. According to the ideas of the literature, adequate way of reading a lyrical poem acts as a process of reproduction of lyrical protagonist’s image-sensation by the reader. According to G.N. Kudrina, this way can be defined on the basis of three characteristics:

1. Creating the image of a lyrical protagonist, a subject of sensation (LPr);
2. Creating the image of a lyrical plot, development of sensation (LPI);
3. Reading the lyrical modality, creating an emotional tone of the text (LM).

Each characteristic included five levels. The individual interpretations of the text presented by the children were compared for revealing the types of interpretation. Therefore, the characteristic of literary development (LD) is the sum total of the scores on the three scales of Kudrina’s technique.

We used Spearman’s correlations coefficient in order to reveal the interaction.

Participants’ creativity level was evaluated with the following methods: verbal and non-verbal batteries of E. Torrance in the modification by E.E. Tunik (1998), D. Johnson’s express-method (Tunik 1997), S. Mednik’s test of remote associations (Ilyin 2009), E.E. Tunik’s creativity self-evaluation (Ilyin 2002).

In order to evaluate mnemonic processes, we used the following tests that are recognized in psychological literature: subtest for defining memory skills from the intelligence structure test by R. Amthauer (Tunik 2009) and method of paired associations in the modification by T.P. Zinchenko (2002).

3. Results

The following distribution of students from our sample was obtained upon the evaluation of the level of literary development: 33% of students had high scores, 40% - average scores, and 27% - low scores.

Moreover, the distribution of the results of creating the image of a lyrical protagonist is not even: 14.3% of children got 1 point, 9.3% got 2 points, 37.1% got 3 points, 9.3% got 4 points, and 30% of children got 5 points. As regards the creation of a lyrical plot, the results presented the following: 18.6% got 1 point, 9.3% got 2 points, 25% got 3 points, 39.3% got 4 points, and 7.9% got 5 points. Creation of emotional tone of the text was at a low level in the majority of children: 10.7% of children got 1 point, 42.9% got 2 points, 20% got 3 points, 19.3% got 4 points, and only 7.1% of children got the maximal 5 points.

As the further study showed, many characteristics of creativity are tightly linked to the level of literary development, which confirms once more the creative nature of reader’s activity (see table 1).

Table 1. Overall table of significant correlation coefficients between the level of literary development and creativity characteristics

Characteristics	Kudrina’s method			
	LPr	LPI	LM	LD

Verbal creativity (Torrance)	0,18	0,22	0,18	0,23
Evaluation of creativity (Johnson)	0,35	0,31	0,26	0,37
Creativity self-evaluation (Tunik)	-	0,29	-	0,2
Originality index (Melnik)	0,18	0,17	0,18	0,21

Namely, verbal creativity, according to E. Torrance, has weak, yet significant, correlations with the quality of creating the image of a lyrical protagonist ($r = 0,18$; $p \leq 0,05$), lyrical plot ($r = 0,22$; $p \leq 0,01$) and the quality of creating emotional tone of the text ($r = 0,18$; $p \leq 0,05$). The correlation of verbal creativity and the overall characteristic of literary development is $r = 0,23$ ($p \leq 0,01$).

Evaluation of creativity by D. Johnson has high correlations with all characteristics of literary development. Namely, the higher is the creativity according to Johnson's method, the higher is the general level of literary development ($r = 0,37$; $p \leq 0,001$). Each component of literary development also correlates strongly with this characteristic of creativity: lyrical protagonist ($r = 0,35$; $p \leq 0,001$), lyrical plot ($r = 0,31$; $p \leq 0,001$), and lyrical modality ($r = 0,26$; $p \leq 0,01$).

Originality index, according to S. Mednik's test, has multiple correlations with the level of literary development; however, they are not as strong as with Johnson's creativity test and are primarily significant at the level not higher than 0,05. The higher is the index of responses originality, the higher is the general level of literary development ($r = 0,21$; $p \leq 0,05$) and all its components: lyrical protagonist ($r = 0,18$; $p \leq 0,05$), lyrical plot ($r = 0,17$; $p \leq 0,05$) and lyrical modality ($r = 0,18$; $p \leq 0,05$).

According to the results of the testing, the majority of children (71%) are at the average level, less than one third are at the low level (28%), and only 1% of children have high scores in the creativity test by Tunik. Creativity self-evaluation was strongly related to the quality of lyrical plot creation ($r = 0,29$; $p \leq 0,001$) and significantly less related to the level of literary development in general ($r = 0,2$; $p \leq 0,05$).

The revealed pattern of interactions between the characteristics of memory development is the following (see table 2).

The characteristics of memory development have significant correlations with creativity characteristics. Specifically, the results of Amthauer's test are related to the creativity evaluation by S. Melnik's method, namely, to the originality index ($r = 0,26$; $p \leq 0,01$) and the uniqueness index ($r = 0,36$; $p \leq 0,001$). Interestingly, the coefficient of memorization in Amthauer's test is more related to the uniqueness index in S. Mednik's method ($r = 0,36$; $p \leq 0,001$). We also revealed a significant correlation between memorization coefficient in Amthauer's test and quality of creating emotional tone of a text by Kudrina's method ($r = 0,21$; $p \leq 0,05$). High coefficient of memorization in Amthauer's test is also common in children with high creativity score in D. Johnson's test ($r = 0,2$; $p \leq 0,05$).

Table 2. Overall table of significant correlation coefficients between mnemonic processes and the characteristics of creativity and literary development

Characteristics	Memorization coefficient (Amthauer)	Method of paired associations
Originality index (Mednik)	0,26	0,23
Uniqueness index (Mednik)	0,36	0,28

LM (Kudrina)	0,21	-
Creativity score (Johnson)	0,2	-

Memory characteristics in the method of paired associations were related to verbal creativity, specifically, to originality index ($r = 0,23$; $p \leq 0,01$) and uniqueness index ($r = 0,28$; $p \leq 0,001$) in S. Mednik's method.

4. Discussion

The structure of students' reading activity during the execution of tasks in G.N. Kudrina's method consisted of interaction of such elements as perception of text, reproductive imagination, comprehension of content and form of the text, and emotional evaluation. It seems interesting to address each of these elements from the perspective of memory's role in their organization and regulation in the reading activity in students of different levels of literary development.

Student's work with the proposed literary piece began with perception and direct comprehension of primarily the meaning of each unit of text separately, as well as meaningful links between them. Therefore, the task required, first of all, to actualize the language experience. In the reading process, the content of each word, as a certain "signal" of text, is revealed only in relation to other units of text, i.e., in the context. The reader receives the signals of text only in case if a sufficient lexical volume is stored in his memory. Linguistic limitations of some students, particularly, small vocabulary, led to errors in text comprehension.

The process of comprehension is nothing but the process of "matching" knowledge and experience from the memory with the perceived object. The information that comes from the text is actively compared with the data of subject's previous experience. The fact that some readers did not know the qualities of the revealed objects did not allow them to reproduce the reality described in the text and led to misunderstanding of the text.

Evaluation and generalization of the elements of the text are based on "systematized" life experience of the reader: the more thought-through and generalized are the life experiences, the easier they are to be used during the text comprehension, and the more correct is the reader's evaluation and generalization of everything presented by the writer. Therefore, the readers with primitive and limited experience had trouble during reading with creating the images of a lyrical protagonist and lyrical plot of the given poem. Such children focused on secondary images, while analyzing the text.

Finally, doing the tasks of Kudrina's method also required the participants to demonstrate so-called "literary competency" – knowledge of theoretical literary concepts, laws of creating a lyrical piece, skills of recognizing the information and interpreting it on the basis of actualization of reader's experience. Lack of literary competency led many students to reader's outrage in the process of the analysis of the proposed text, i.e., fantasizing, excessive subjectivity in the judgments, second-guessing and inadequate judgments.

Comprehension of a lyrical piece is impossible without versatile emotional activity of a reader, his ability to experience and feel the content of the piece, and sympathize its characters. However, emotional effect of lyrical pieces is possible only in case if the reader has experienced before something similar to what he perceives in present moment. In the reading process, analysis of the perceived situation proceeds by its comparison with a prototype in the reader's memory: the closer is the situation to a prototype that evokes happiness, rage or compassion, the stronger is the development of corresponding reactions. Hence, previous emotional experience provides emotional involvement in the events, which makes it possible to experience aesthetic compassion for the characters of the piece. Therefore, in our opinion, the lack of such experiences in many students affected the quality of creating the lyrical modality and emotional

tone of the text during the tasks by Kudrina's method.

To summarize, successful performance in Kudrina's method also reflects participants' ability to reproduce, integrate and use the previous experience (broadly speaking).

Verbal creativity in Torrance test (Taylor 1963) reflects person's ability to produce a large number of ideas in verbal form; to approach the problem from different perspectives and to use different solving strategies; and to develop the new ideas in detail. Such ability largely depends on the extent of wideness, generalization and systematization of person's previous experience, including the language. Systematization of experience by the meaning is a condition of its further successful reconstruction; it increases memory's readiness for reproduction and, therefore, provides velocity, flexibility and originality during the verbal tests performance: the more thought-through and generalized are the life experiences, the easier it is for a person to use their elements in creative activity. Hence, memory, which stores the knowledge of the language system and products of processing various experience of person's interaction with the world, acts as the foundation of verbal creativity as an internal process of production of new syntax and grammar structures, which transfer a certain idea to the reader. Based on the revealed correlations, it is possible to hypothesize that students, who got a higher score on verbal creativity, are more capable of rational organization of the functioning of their memory due to the skills of meaning-based processing, generalization and systematization of information, which gave them certain advantages in solving the tasks of Kudrina's method.

D. Johnson's express method is used for expert evaluation of creative manifestations available for direct observation. The author of test's adaptation defines creativity as the ability to produce extraordinary ideas based on one's own knowledge (Tunik 1997). Such ability implies the use of previously accumulated knowledge as a means of solving a task by actualizing it and transferring to the new conditions. This provides a person with an opportunity to compare knowledge with the conditions of the task and to create a new idea based on that. The revealed correlation between participants' creativity scores in D. Johnson's test and evaluation of their literary development can be explained by the fact that such cognitive activity was actualized by the memory system also for the tasks by Kudrina's method.

Verbal creativity in S. Mednik's method is defined as a process of combining the elements of a situation that belong to mutually-remote associative fields. Participant is required to establish an associative link between them by selecting certain words from the vocabulary stored in his memory, which correspond to the taught subject and which can create collocations with each of the elements. Hence, performing this task required actualization of participants' language experience, it was a condition of successful work with the tasks by Kudrina's method and also relied on the wideness and extent of generalization and systematization of previous experience.

E.E. Tunik's questionnaire of creativity self-evaluation allows revealing to which extent participants consider themselves to be creative. It is related to so-called "self-concept" as a relatively robust system of person's representations of oneself, which develops under the influence of his life experience. It is an integral experience of one's Self that is stored in the memory and that defines person's level of aspirations. Actualization of the image of Self in the memory has an anticipatory function by being the basis of choosing aims of a certain complexity. Hence, children that were incapable of adequately evaluating their personality specifics showed uncertainty during Tunik's test and, usually, refused to do the tasks by Kudrina's method. Apart from the ability of self-observation, self-evaluation also implies the ability of generalization of the elements of previous experience. According to the obtained correlations, it is possible to hypothesize that the level of development of this logical operation was insufficient in a large number of children from our sample, which caused the difficulties in solving the tasks by Kudrina's method, in particular, in creating the image of a lyrical plot.

Amthauer's test and S. Mednik's method are aimed at working with verbal material. In Amthauer's test, the students had to memorize a number of words that were systematized in a table upon certain categories, and then define to which category a certain word belongs by using the first letters of words provided in the task. Hence, during the test, voluntary

memorization took place, and it was mediated by the meaning-based systematization of verbal material as a special mnemonic tool. Memorization coefficient defined the state of participants' working memory, which performed the logical processing of that verbal material. Performing the task by S. Mednik's method also required actualization of participants' language experience and logical processing of its elements by their correspondence with the proposed associative fields. It depended on the state of participants' working memory.

The fact that the memorization coefficient in Amthauer's test is related to the uniqueness index by S. Mednik's method can be explained by the following. Uniqueness index has higher scores in the participants who are capable of restraining the first response that comes to mind, which is usually simple and standard. Such skill requires processing large amount of information per unit of time, and consequently, large volume, precision and flexibility of the working memory.

The correlation of memorization coefficient in Amthauer's test and the quality of constructing emotional tone of a text in Kudrina's method can be explained by the following. Constructing emotional tone of a text required the participants to actualize their own emotional experience and analysis of the piece's content based on that experience. Successful solving of that task depended on the presence of similar emotional experiences in students' memory, which provided comprehension of the situation presented in the text, as well as on the extent of development of logical operations of analysis, comparison, establishment of connections and generalization, which were also used during the conductance of Amthauer's test. The fact that high memorization coefficient in Amthauer's test is common in children with high creativity scores in D. Johnson's test might indicate that memory functioning is the foundation and defines the successfulness of solving literary creative tasks.

The fact that memory characteristics in the paired associations method are related to verbal creativity, particularly with originality and uniqueness indexes in S. Mednik's method, can be explained by the following. The main and general characteristics that define successful performance in these tests are the velocity of associations creation, originality of associations and goal-directed associating. By using the paired associations method, we aimed at defining the capacity of participants' short-term memorization mediated by the creation of associations between words-objects and words-bearers. Reproduction of words was conducted in writing in a free order.

5. Conclusions

1. Present methods allowed revealing the state of literary development, working memory and verbal creativity development in children of younger adolescent age. They also provide an opportunity of further analysis of these processes, dynamics of their development and mutual influence in a certain age period.
 2. The obtained correlations confirm the possibility of hypothesizing about the relations between memory and literary creative activity in younger adolescence.
 3. We obtained a number of data that might point to the fact that memory functioning is an internal condition and a mechanism of solving literary creative tasks.
 4. The obtained correlations allow anticipating the development flow of the regulative functions of memory in the process of studying literature in school, which, in perspective, makes it possible to develop recommendations on organizing adolescents' education based on the revealed patterns.
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References

- Barsalou, L.W. (1992). *Cognitive psychology: An overview for cognitive scientists*. Hillsdale, H.J. Erlbaum, pp. 435.
- Fodor, J. (1975). *The language of thought*. Cambridge, MA: Harvard University Press, pp. 435.
- Holyoak, K. and Morrison, R.G. (Eds.). (2000). *The Oxford handbook of thinking and reasoning*.

New York, NY: Oxford University Press, pp. 562.

Ilyin, E.P. (2009). *Psikhologiya tvorchestva, kreativnosti, odarennosti*. [Psychology of creative activity, creativity and aptitude]. St. Petersburg: Piter, pp. 448.

Kudrina, G.N. (1990). Kriterii otsenki rezultatov obucheniya literature v shkole. [Evaluation criteria of the results of studying literature in school]. *Voprosy psikhologii*, 2, 50-57.

Kudrina, G.N., Melink-Pashaev, A.A. and Novlyanskaya, Z.N. (1988). *Kak razvivat khudozhestvennoe vospriyatie u shkolnikov*. [How to develop artistic perception in school students]. Moscow: Znanie, pp. 122.

Marantsman, V.G. (1992). *Literaturnoe i rechevoe razvitie shkolnikov v ikh vzaimosvyazi i spetsifike*. [Literary and speech development of school students in their interaction and specifics]. *Literaturnoe i rechevoe razvitie shkolnikov: Mezhvuz. sb. nauchn. trudov*. St. Petersburg, pp. 3-12.

Moldavskaya, N.D. (1976). *Literaturnoe razvitie shkolnikov v protsesse obucheniya*. [Literary development of school students in the educational process]. Moscow: Pedagogika, pp. 224.

Pribram, K. (1975). *Yazyki mozga*. [Languages of the brain]. Moscow: Progress, pp. 346.

Solso, R. (2006). *Kognitivnaya psikhologiya*. 6-e izd. [Cognitive psychology. 6th edition]. St. Petersburg: Piter, pp. 589.

Taylor, C.W. (1963). *Scientific creativity. Recognition and development*. New York: Wiley, pp. 244.

Tunik, E.E. (1997). *Psikhodiagnostika tvorcheskogo myshleniya. Kreativnye testy*. [Psychological diagnostics of creative thinking. Creative tests]. St. Petersburg: "Didaktika Plyus", pp. 44.

Tunik, E.E. (1998). *Diagnostika kreativnosti. Test E. Torrensa. Metodicheskoe rukovodstvo*. [Creativity diagnostics. E. Torrance's test. Methodic guidelines]. St. Petersburg: IMATON, pp. 170.

Tunik, E.E. (2002). *Diagnostika lichnostnoy kreativnosti*. [Diagnostics of personality creativity]. In: Fetiskin, N.P., Kozlov, V.V., Manuylov, G.M. (Eds.). *Sotsialno-psikhologicheskaya diagnostika razvitiya lichnosti i malykh grupp*. Moscow: Izd-vo in-ta psikhoterapii, pp. 59-64.

Tunik, E.E. (2009). *Test intellekta Amthauera. Analiz i interpretatsiya dannykh*. [Amthauer's test of intelligence. Analysis and interpretation of data]. St. Petersburg: Rech, pp. 96.

1. Dagestan State University, 367025 Russia, Republic of Dagestan, Makhachkala, Gadzhiyev Street, 43-a. E-mail: msaika@yandex.ru

2. Dagestan State University, 367025 Russia, Republic of Dagestan, Makhachkala, Gadzhiyev Street, 43-a

3. Dagestan State University, 367025 Russia, Republic of Dagestan, Makhachkala, Gadzhiyev Street, 43-a

4. Dagestan State University, 367025 Russia, Republic of Dagestan, Makhachkala, Gadzhiyev Street, 43-a

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