Development of Ability of Pre-school Children to Reflect Possible Relations.

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Abstract

Dialectical thinking is a mechanism of handling with oppositions and appears as a mechanism of construction of possible relations. Implementation of dialectical mental actions allows us conceiving possible relations, basing on the relations of reality. The purpose of current research was to examine the hypothesis that systematical discussion on problematic controversial situations with pre-school children contributes to development of their dialectical thinking and, therefore, the ability to anticipate possible relations.

Forming experiment has been conducted for 2 years and consisted in the following: 5 year old children (as for the moment when experiment begun) participated in 3 weekly classes where they faced problematic controversy situations and solved them while joint activity. A scheme was used as a mean of acquirement of dialectical relations.

The experiment resulted in the fact that the hypothesis of a possibility of purposeful formation of dialectical thinking at preschool age has been confirmed.

Keywords: dialectical thinking, possibility, controversial situation, anticipation, space of possibilities, developmental psychology, early child education.

1. Introduction

The category of a “possibility” allows description of future situation where the person is meant to act. Adequate representation of the situation of future action appears as one of the crucial conditions of the successfulness of this action.

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In order to construct a probable image of the future, the person needs to take into consideration the trends of development of all the circumstances which he/she cannot alter; evaluate the perspectives of the partners’ (other persons’) actions and his/her own possible movements.

Speculating on the implementation of a structural dialectical method for the analysis of a situation, the following should be emphasized: anticipation of the future is always executed in the framework of solving a certain problem. I.e. this refers not to “possibilities in general” but to possible impact factors under the condition of performing a certain action. Accordingly, possibilities of all the parameters of developing situation should be analyzed through the prism of the planned action and the probability of its successful execution. Understanding the possibilities existing within the situation, a person can affect its development in his/her favor with higher efficiency.

Appealing to analogies, taking their place in the past, is a significant aspect of construction of the image of future. However, the future never contains past forms, never replicates them identically.

Efficient anticipation presupposes the ability to figure out possibilities of various parameters of the situation of reality. As we have demonstrated before [1], application of dialectical mental actions allows conceiving possible relations, basing on the relations of reality. The possible, therefore, is created through mental transformation of the real and appears new in relation to the latter.

In the framework of a structural dialectical approach in psychology [2, 3, 4] dialectical thinking is regarded as a system of special dialectical mental actions focused on transformation of the relations of oppositions.

Transformations are performed through the following dialectical acts [5]:
1. Dialectical transformation. For any objects, ideas, phenomena, situations a person finds oppositional ones.
2. Dialectical integration. In a structure of any object or situation the person establishes the presence of mutually disaffirming each other oppositions. There can be several pairs of this kind, and each of them characterizes prominent features of the object.
3. Dialectical mediation. For any pair of oppositions a person finds or constructs an object where those oppositions are present simultaneously.
4. Dialectical seriation. The person regards any object or situation as an intermediate from the initial condition to the final one, oppositional for the first.
5. Dialectical transaction. While exploration of a process, the person can regard it in reverse order: which was initially considered as an end of the process is analyzed as its beginning, and the initial condition is understood as the final one.
6. Dialectical change of alternative. The person regards an object in the context of one pair of oppositions, and in the context of another pair.
7. Dialectical identification. The person firstly sees objects and phenomena as oppositional ones, and then establishes their identity and similarity.
8. Dialectical dis-identification. The things initially seen by the person as identical, now are understood as oppositional.

Dialectical actions allow conceiving the possibility of an object to be different.

2. Methods

Our research was dedicated to the testing of the following hypothesis: systematic discussion on problematic controversial situations with pre-school children contributes to development of their dialectical thinking and, therefore, the ability to anticipate possible relations.

We (in collaboration with Olga A. Shiyan, Irina I. Vorobyeva and teachers and psychologists of the kindergarten) have conducted a research on the opportunities of forming dialectical thinking at pre-school age. The study took place within the period from September, 2009 to May, 2011 in the kindergarten #1602, Moscow. Experimental group consisted of 19 children (9 boys and 10 girls), the control group involved 22 students (11
girls and 11 boys). All participants of this experiment were 5 years old when it began. Both groups followed similar educational programs.

Diagnostics of the level of maturity of dialectical thinking was conducted in September, 2009, May 2010 and May 2011 by means of the following techniques: “What can be simultaneously?” [6] and “Unusual tree” [7]. “What can be simultaneously?” technique is designed to diagnose dialectical action of mediacy. The task is presented as a “What can be simultaneously?” question for several pairs of attributes: 1) black and white 2) big and small 3) light and heavy 4) alive and not alive 5) the other and the same. The interviewer proposed to a child to give a few answers for each question and explain them. Answers containing the idea of development of an object, of transition from initial state to the opposite (for example, a response like “the snow while melting turns from white into black” is pre-dialectical) are considered dialectical. Also the ones pointing at the moment of transition in the development process (for example, “if we drip a bit of ink on a sheet of paper, the sheet is white and black in the moment when the ink drop falls on it”); or the answers revealing opposite relations within the object (for instance, “a cut flower is dead and alive”; “an actor playing a role is the same and the other”).

“An unusual tree” method required from the participants to draw a picture of a common tree (first painting) and an unusual tree (the second painting). A picture of the first tree structurally transformed, would be called dialectical (for example, a tree with its roots up as an opposition for a common tree).

The idea of the forming experiment was the following: we conducted 3 weekly lessons (30 minutes each) with the experimental group. Pre-school students were faced with problematic controversial situations, dialectical problems were formulated, so the children had to solve them while joint activity. As an instance, one can see discussion of a fairy-tale named “Razumnitsa” (in other folklores – “Smartlady”, “Quick-witted girl” etc). According to the plot, the girl solves a problem posted by a king or a rich landlord and consisting of opposite controversial requirements: to come “riding and walking”, “naked and dressed”, “in the day and in the night”, “with a gift and without”, “to stop inside and outside of the castle” simultaneously. Together with the teacher children discuss and propose their ideas of how to solve above mentioned problems. The second task is to discuss the question “Are the three problems posted by landlord same or different?” Similar issues have been talked over on the ground of other fairy tales, such as if “The old woman from “The Gold fish” by Alexander Pushkin was the same in the beginning and in the end of the story?” “Who was Orpheus in the myth about Orpheus and sirens – the listener or the singer?” [8]. Phenomena of wild and inanimate nature, representations of time and movement have been analyzed in the same manner [9, 10, 11].

A scheme was used as a mean of acquirement of dialectical relations (Olga A.Shiyan, 2012). This scheme helped to distinguish oppositional relations (oppositions were symbolized with squares of contrast colors, black and white, for example) and identify the answers meeting controversial requirements; as well as discover opposite characteristics in one object being discussed. Thus a scheme helps to visualize hidden attributes of an object.

3. Results

<table>
<thead>
<tr>
<th>Measures</th>
<th>September, 2009</th>
<th>September, 2010</th>
<th>May, 2011</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>EG</td>
<td>CG</td>
<td>EG</td>
</tr>
<tr>
<td>“What can be simultaneously”</td>
<td>0.24</td>
<td>1.11</td>
<td>1.71</td>
</tr>
<tr>
<td>technique</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>“An unusual tree”</td>
<td>0.07</td>
<td>0.05</td>
<td>0.31</td>
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<tr>
<td>technique</td>
<td></td>
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<tr>
<td>Overall average</td>
<td>0.16</td>
<td>0.58</td>
<td>1.04</td>
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<td>score</td>
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Analysis of variance of diagnostic research data has shown that distinction of average means of the level of dialectical thinking development in the experimental group from year to year was statistically significant (p < 0.05). The difference between similar indexes for the control group were did not appear statistically significant (p < 0.05).

4. Discussion

Thus this study has confirmed our hypothesis that purposeful formation of dialectical thinking at preschool age is possible. Representatives of the experimental group demonstrated serious increase of variability of their answers while completing diagnostic tasks, which bespeaks for enlargement of the specter of their representations of the space of possibilities. One should notice that this increase in amount of dialectical answers happened through the increase in the amount on answers containing the idea of transformation, development, transition from the initial state of the object to the opposite one, with the search for transitional forms and alterations linked to the latter. Thus children found new opportunities of objects assuming what they could become through transformation of this or that characteristic. Conspicuous is the decrease of the level of dialectical thinking development in the control group. We tend to explain this with some specific features of educational environment existing in a kindergarten, which means growing number of school-like lessons while coming closer to the school age. Those classes are mostly focused on acquirement knowledge and skill to produce “correct answers”. Besides this, teachers do not eagerly initiate discussions between children, preferring concrete explanations.

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References