Third Annual International Conference «Early Childhood Care and Education»

Interconnection of the Ability to Cooperate with Peers and Development of Dialectical Thinking of Senior Pre-school Children.

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Abstract

The article is dedicated to examination of interconnection of the level of dialectical thinking of senior pre-school children and their ability to interact with peers. This research revealed statistically significant interconnection of child’s ability of productive handling with oppositions (dialectical thinking) and such components of the interaction with peers as the ability to collaborate and ability to behave independently. Thus, one can state the discovery of a cognitive factor of productive communication performed by senior pre-school children.

Keywords: dialectical thinking, collaboration, independent behavior, productive communication.

1. Introduction.

Interaction with peers is an important part of life of a pre-school child, i.e. due to this interaction the child learns to be active, react at changing environment flexibly, analyze the social situation. In the framework of communication formation of self-consciousness and self-concept takes place. While interacting with peers the child gains initial skills of evaluation of other’s actions, learns to treat those objectively. This in its turn allows forming of a certain position in further interaction of the kid with social reality when he/she keeps on developing. With regard to this, exploration of the interaction process and the factors determining its development becomes front and center.

This research considers the cognitive factor, i.e. dialectical thinking to be the factor determining a kid’s ability to interact with peers productively.
Cognitive factors of productive interaction between pre-school students have been already explored in a number of works by Russian researches. E.O. Smirnova [1] has discovered that contrast groups of popular and not popular pre-school children do not vary in terms of development of visual active thinking, what results in the conclusion that the level of intellectual development does not affect the child’s popularity in a peer group. N.S. Denisenkova [2] has presented the evidence that gifted pre-school students having high indexes for formal intelligence, very often experience difficulties in communication with peers. O.N. Denisenko [3] and A.V. Kuznetsova [4] have revealed complex questionable connections between the development of creativity and sociometric statues of children. Herewith their research works mostly covered junior pre-school children and teenagers.

Basing on the data of previous researches, we assumed that such cognitive component as dialectical thinking could be significant within pre-school kids’ interaction.

The concept of dialectical thinking has been introduced in the framework of structural dialectical approach [5, 6, 7, 8] where thinking is regarded as a process of active understanding of reality and solving appearing problems through productive handling with oppositions. N.E. Veraksa defines dialectical thinking as “an ability to handle with oppositions, find a resolution of a contradiction, construct such situations where two opposed needs are satisfied simultaneously and not one is met at the other’s cost” [5, p.66]. Proponents of this approach have developed a hypothesis that the mechanism of dialectical thinking can be considered as a universal one in the context of solving different problems, including social ones. In particular, this is what N.E. Veraksa and E.E. Krasheninnikov say [5, 6]. This assumption is grounded on the fact that while social interaction children face the necessity to solve problematic and controversial situations posed by opposed positions of communication partners. Similar hypothesis correlates with the ideas of J. Piaget concerning the unity of social and intellectual development.

In the framework of structural dialectical approach I.I. Vorobyeva [9] has also performed a research which discovered a link between referentness of the university student and the level of development of their dialectical thinking. Still the role of dialectical thinking in the interaction of pre-school children has never been examined.

While designing this research a question has occurred – which operational variables it would be expedient to select in order to evaluate the level of interaction of pre-school students. We decided not to use the level of popularity as the sociometric status cannot be considered a stable enough characteristic in pre-school period, but such substantial parameters as the skill of construction of cooperative relations and independent behavior.

We have selected the ability to build up cooperative relations and to behave independently as the components of the interactive part of communication. The choice of the ability to cooperate with a peer as a variable is determined by the idea of high significance of this factor of interaction in the pre-school period – while redirection of the kid to learning activity and deeper involvement into social connections. Such evidence can be found in the works by V.V. Davydov [10], G.A. Tsukerman [11], E.E. Kravtsova [12] (she thinks collaboration as cooperation of children in learning activity and preparing to it), D.B. Elkonin [13] (in play activity) etc. This work refers to cooperation as an ability to keep hold of the situation of the presence of common target, to take in account the partner’s position while solving problems, and to coordinate his or her actions with another one, while interaction.

However examination of the ability to cooperate only, appears to be very narrowed view on the interaction of pre-school peers. Different scientists see personal development as an integral process unalterably taking place in two directions, i.e. the social one and personal as it is – the independent one. Naturally one makes a conclusion that with the purpose to achieve integral development, not only the activity in the framework of social norms and the ability to reproduce them, is required, but the ability to the kid’s own separated and independent action (free from those norms), being also creative (according to E.V. Ilyenkov [14], N.E. Veraksa [5], V.V. Davydov [10]), separate (V.S. Mukhina [15]), focused on the implementation of imagination (E.E. Kravtsova [12]).

Regarding this, we suppose it necessary to contemplate one more feature allowing us formation of more structured and integrated understanding of pre-school interactions, i.e. the ability to think independently. The
The problem of independent behavior was explored in the works by S.Ash [16], S.Milgram [17] (in the context of the influence of authority on decision making) etc. E.V.Subbotsky [18], [19] ability to think independently is examined in the context of switching to selective assimilation of the social reality by pre-school kid, redirection to the new type of relationship and interaction with society. Following E.V. Subbotsky we consider independent behavior as a specific form of arbitrariness: the ability to acquire suggested rule, to discover incongruity of the partner’s actions with this rule, to keep hold of the rule in spite of incorrect activity of the partner, i.e. following the rule and not the example.

Ability to cooperate on the one hand, and to act independently, on another, reflects the child’s behavior in contrast situations – when children are required to create a common product (i.e. to develop a common rule) and when it is necessary to keep hold of your rule consciously not following presented example provided by your partner. Namely this capability to imply both strategies proves integral development to maintain interaction.

2. Study

2.1. Research Hypothesis

We have advanced the following hypothesis in the framework of this research. The main one: 1) there is an interconnection between the development of dialectical thinking of senior pre-school children and their ability to interact with peers. Specific ones: 1) there is an interconnection between dialectical thinking of senior pre-school children and their ability to cooperate with peers 2) there is an interconnection between dialectical thinking of senior pre-school children and their ability to act independently while interacting with peers 3) there is an interconnection between the ability to cooperate of senior pre-school children and their independent behavior while interacting with peers.

2.2. Participants

This research was conducted in 2 Moscow pre-school educational institutions: №187 and № 533. 48 pre-school students aged 5-6 took part in it.

2.3. Methodological Toolbox

“What can be simultaneously” – the technique, developed by Nikolay Veraksa [8]; [9]. This technique is dedicated to examination of mental strategies of handling with oppositions. This tool is focused on diagnostics of the child’s ability to construct an object or phenomena uniting oppositions in them.

“The Mittens” (“Rukavichki) technique (by G.A.Tsukerman) was designed for diagnostics of a child’s skill to enter into relations of cooperation. Children had to complete a common task working in pairs. The tool evaluated the extent of involvedness in the common achievement of a target and taking in consideration the partner’s opinion.

Modified tool named “Cups” (“Chashki”) (the author of the initial version was E.V.Subbotsky) is devoted to the examination of independent behavior. The respondents had to acquire a rule and then found themselves in a situation when specially trained partner violated this rule. The experimenter analyzed if the children were able to keep hold of the rule in this situation either they demonstrate low level of arbitrariness and follow the example set by their partner. The tool has been modified according to the current research goals. Initially, the violator was an adult but now it was another child, as we longed to examine namely the communication with peers.

2.4. Diagnostic procedure

“What can be simultaneously” tool was performed orally and individually. A child was to answer 5 similar questions requiring incorporation of oppositions. It was possible to propose several answers for each question. The best responses were considered while evaluation.

In the “Mittens” technique 2 children had to complete a task – to paint 2 mittens for a doll. The interviewer never mentioned the necessity to act cooperatively. We analyzed the extent of children’s
understanding to organize collaborative activity and take in consideration their partner’s position in order to gain a common goal.

“Chashki” tool suggested that the experimenter taught 2 children to follow instructions individually. Whereupon each child was given opposite instructions. Respondents did not know that they had been taught different rules. When the children started to work together, the interviewer provided them with common instructions and analyzed the extent of ability of each child to keep hold of his or her rule omitting following their partner’s example.

Initially we had an assumption that demonstration of various types of behavior might depend on the partner with which a child was interacting and on the level of previously established relations. However, the data received while observations allowed us to conclude that this strategy is presented sustainably enough, regardless of the partner and his or her behavior.

3. Comments and interpretation criteria

For “What can be simultaneously” tool we counted the amount of dialectical answers integrating oppositions as well as the amount of transitional responses.

In the “Mittens” technique the following groups of answers came forth:

- “Execution without interaction”. This strategy supposes the absence of understanding the commonness of the task for the both peers and the impossibility to perform without referring to the partner, without the information on the peer’s actions. Normally such children complete the task in silence.

- “The off-topic talk – without the reference to the task”. Children address each other but their interaction is not oriented on their common activity in order to do the task.

- “Request on the global help to complete the task”. A child asks the peer for help, but such an interaction has nothing to do with developing of a way to solve the problem.

- “Request on the mean to complete the task”. This strategy could be indicated when children started addressing their peer to get the mean necessary to perform the task – i.e. to get the information about the other’s behavior. Such requests usually sounded like this: “Which one have you taken?”, “Let us start with the small one”, “I have chosen the small one” etc.

The last type of responds got the highest score while evaluation.

“Cups” technique has provided us with 3 kinds of answers as follows:

- “Individual actions” – the absence of comparison the child’s actions with the way the peer was completing the program.

- “Globally copying actions” – after the peer got involved into the activity, respondent replaced his or her strategy with the partner’s one, often without any explanations.

- “Independent actions”: when the peer started to perform his or her “incorrect program”, the respondent did not change his way of acting, thus demonstrating independent behavior.

While examination process we could develop a system of an integrated evaluation of the interaction with peers relevant to the cumulative analysis of child’s ability to act independently and the capability to cooperate. We have revealed low, middle and high levels of the ability to interact with peers. Low level meant the child got the lowest score for both parameters (ability to cooperate and independent behavior), or got low marks at least for one of them. High level suggested high score for both parameters. And the middle one meant medium performance regarding both criteria.

4. Research Findings.
Statistical processing of received data has been executed on the basis of the SPSS 17.0 software implying Pearson’s correlation criteria, contingency tables and frequency response analysis.

Firstly we have discovered a significant correlation index (0.596) on the level 0.01 between the level of interaction with peers and development of dialectical thinking. Moreover, the correlation indexes for the ability to cooperate and the level of development of dialectical thinking was also significant (0.383); as well as in the case of the ability to act independently and the level of development of dialectical thinking (0.413).

The index of correlation between the ability to cooperate and to act independently was not significant (0.234 on the level 0.01).

5. Discussion

Existence of significant correlation between the level of development of dialectical thinking and the level of interaction with peers argues for the confirmation of the main hypothesis: there is an interconnection between the development of dialectical thinking of senior pre-school children and their ability to interact with peers.

One can also state that the children with higher level of development of dialectical thinking demonstrate independent behavior and the ability to cooperate significantly more often that the ones with low score.

The absence of correlation between the indexes of ability to cooperate and to act independently says for the fact that those parameters represent the components of interaction that have no links to each other.

6. Conclusion

This research has revealed statistically significant interconnection between the development of dialectical thinking of senior pre-school children and their ability to cooperate and act independently while interacting with peers. We consider it promising to design a teaching experiment dedicated to verification of the assumption that dialectical thinking of senior pre-school children is their mechanism of interaction with peers.

One can suppose that owing an ability to implement the operations of dialectical thinking, a child will have the opportunity to develop harmonically both sides of the structure of his or her social interaction with peers. This can direct the child to the way of integral personal development. This assumption gives us some guidelines for further research work.

References