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TIME AND CHILD

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Abstract. The problem of the time concept formation at children of preschool age is considered in this article. The summary analysis of the scientific content of the 'time' idea shows plurality of psychological time aspects. This situation defines several areas of work in of the time concept formation at preschool children: emotional development, semiotics development, and activation of emotional memory in the delayed action conditions. The developmental tasks suggested are directed to activate the emotional experience of events by a child and examine an event as the important time marker. Execution of tasks offers purposeful development of the child's semiotics function in conditions of the sign and symbolical activity organization as well as acquisition of the special symbolics linked to fixing of measures of time.
Keywords: time concept; sign and symbolical activity; semiotics function.

As a fundamental category of psychology, time plays a significant role in the person's cognition of world around. At preschool age, the emotional experience of time sequence has a number of particular qualities. At real-time playback of such sequence among preschool children, emotionally stronger stimuli come to the fore. To preschool children, high emotional sensitivity is subsistent with respect to surrounding people's moods and the novelty of surrounding objects appearing in the field of view. Coupled with cognition immaturity, child's emotional inclusiveness in daily reality blocks positive changes in his/her reflection and personal development. Concrete experiences acquire an egocentric orientation, and the gap with social norms blocks the cognition in the analysis of events of everyday life. Particular qualities in preschool child's event perception determine this or that type of social behavior and form of activity. He/she passes a long way of development before his/her emotions acquire independence and also progressive nature of influence on such cognition processes as perception, representations, thinking, and reflection, before they become personal and social and psychological. The sequence of the event arrangement in a child's inner world is defined not by the real time sequence of such events but the child's emotional inclusiveness in them. Later on, the emotional significance of perception as the training progresses is gradually replaced with the semantic significance. In intelligent material, the sequence of separate moments coincides with the cause and effect relations between them.

The maturity of time concepts is being shown in ability to define, measure time and correct designate it is to in the speech, feel its duration to regulate and plan own activity in time, change speed and a rhythm of actions depending on time limitations [1]. At the same time, specific features of time as objective reality complicate its perception by children. Time is always in the movement, course of time always descends in one direction – from

the past to the future, it is irreversible, it cannot be detained, returned or "shown". According to I. Kant, time belongs only to a percipient; it is not a property of things.

The current state of the research of time is defined by the fact that its theoretical foundation has been downloaded in development of diverse sciences: natural, on the one hand, and within the bounds of philosophy, physiology and psychology, on the other. It is the evidence of the significance of the time studying problem itself for human life and defines the necessity to examine the theoretical provisions in each science above.

Since ancient times, the time problem is a subject of studying in philosophy, and especially the philosophical concepts have defined development of various psychological approaches to solve the problem of perception, idea, and sense of time. In psychology, it is distinguished objective, natural-science time which reflects communication in time of the phenomena and objects, on the one hand, and psychological time of a personality, on the other. Between characteristics of both objective and psychological time there is no unambiguous compliance: whereas characteristics of an objective time (duration, sequence, and synchronism) can be measured rather precisely while a psychological time has its own special functioning.

In the history of the natural sciences development, revolution in judgment of the 'time' concept was brought by I. Newton. The 'objective Newtonian time' suggests conceiving time as the line consisting of equivalent parts or points as natural sciences do it, physics, in particular. In the Newtonian concept of absolute time there have been three basic characteristics of time:

- the sequence to characterize continuous existence of one by one phenomenon or event;

- the duration to be determined as length, extent of one event in time;

- the synchronism to be understood in two meanings: as a condition of the interrelated phenomena, their systems, and implementation of various states at the same time, their coincidence in time [8].

The distinct solution of the individual time problem has been also proposed within various psychological approaches. Two main ones of them are possible to distinguish. The first of them recognized by U. Dzhems [3], E. Gusserl [2], M. Merlot Ponti [7] , and Zh. Delyoz [18]; the second – by S. L. Rubenstein [11], D. G. Elkin [17], and Yu. K. Strelkov [14]. The first approach implies that the consciousness and the time are inseparably linked among themselves and exist in the unity. The second one claims that the time exists objectively, while the consciousness only reflects time characteristics of world around.

Research of child's concept of time has been conducted both abroad (Ge. Piaget [9], P. Fress [15], D. Krech, R. Krachfild [4], H. Shiffman [16], and others), and in domestic science (D. G. Elkin [17], T. D. Rikhterman [10], S. D. Lutskovskaya [5] and others). A child perceives time indirectly, through specification of time units and relations in constantly repeating phenomena of life and activity.

Zh. Piaget takes up genesis of time concepts in close relationship with formation of certain operational structures. For example, ability to define the place of some changes in the system of other ones (which allows dating events) is formed only by the time when a child becomes proficient in intellectual concepts, i.e. by 7 years. Development of ideas of time in children is in close and necessary relation with that of mental functions, and adequate reflection of the time relations is only attained provided all functions have maturated. In the course of mental process formation and improvement during ontogenesis, more and more adequate adaptation to time characteristics of the environment as

well as acquisition of harder and harder time conceptions and survival facilities in time is provided. According to Zh. Piaget, the stageness of the intellectual development and that of the genesis of time concepts act as deeply interrelated and interdependent phenomena. In ontogenesis, formation of new operational structures of intelligence, their transfer to new levels of functioning act as the prerequisite for formation of more and more perfect means of time application [9].

The researchers who deal with the problem of time category note universality of time characteristics and the phenomena (recurrence, irreversibility, need cathexis, etc.) on their applicability in description of any processes by nature, and that does the time concept to be algorithmic per se [10].

Among children of the advanced preschool age, it is possible to form skill of activity regulation in time. For this purpose, it is necessary to create special situations to focus children's attention on length of various vital time intervals and reveal for them what they can manage to do for these intervals of time; how to measure any action process; how to appreciate independently time intervals, analyze the plan of own actions and their fulfillment in such time periods which have been established in advance.

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Factors the time concepts based on are as follows:

- Awareness in tine standards (a general concept about them). For a child to understand what time length is being discussed or independently determine duration of a time interval, he/she needs to learn to use these means and learn to use a clock.
- Experience – as sensation of time interval duration. For this purpose it is necessary to arrange various children activity within certain time intervals. It will give them the chance to sense the time extent and to see what he/she can really manage to make for this or that time interval. Later on, these skills will be a basis to form ability to plan their activity in time, that is to choose work volume according to the scheduled time.
- Ability to estimate time intervals without a clock on the basis of deep psychological time sense. Mutually control together with adults trains children in adequacy of estimates, therefore such control is necessary as reinforcement when skills of orientation in time are being developed.

Determination of objective time assumes a starting reference point. Usually an event concerned with live emotions or bright conceptions serves as such reference point and therefore it is easily allocated and perceived.

Speaking about the structure of child's time conceptions, it is possible to allocate, at least, three various aspects of them:

- Adequacy of reproduction of time intervals and their correlation with activity (ability to arrange actions in time).
- Getting an idea of verbal indications of time (from simpler 'yesterday/today/tomorrow' to more complex – 'past/present/future,' etc.).
- Planning of sequence of events/actions/phenomena.

Four theoretical provisions of domestic psychology reveal as a key to understanding of psychological conditions of formation of time concepts. To start with, the idea of social conditionality and historical variability of mental functions; second, the point on their instrumental (sign) character; third, the idea of unity of structure of practical and mental activities which defined system nature of genetic researches; and fourth, the idea of mediation of mental function development in joint activity and area of relationship with people around.

The sign and symbolical approach in formation of preschool children concepts has been developed at the N. G. Salmina's school which combined the operational structure data and those of sign mediation of intellectual activity [12]. One of concrete forms of this interrelation are the initial data and practical operations of a child which are being performed in common with an adult and included in the system of the data and household behavior development. Special tasks, use of a calendar, a clock and other objects create data and practical communication of a child with the world, meet his/her needs and requirements, and mediate interactions and relations with adults.

The data and practical activity of a child in cooperation with an adult have to be arranged using the delayed action system. Delays and breaks cause in a child the state of expectation, readiness, search, and updating of a previous or forthcoming operation and they act as the special methodical means of formation and identification of time concepts [13].

The significant role of the mediated components in time perception stipulates considerable difficulties which processes of consciousness among children are connected with. The knowledge and skills connected with the characteristic of time intervals as well as mastering of time standard system, are quite complex. Mastering knowledge of the time standards assumes:

1) child's familiarization of abilities to measure time with application of standard time measurement devices;
2) mastering knowledge of time standards, their quantitative characteristic and perception of their length;
3) awareness of dependence between separate links of that difficult system of time standards.

Thus, all time measures (minute, hour, day, week, month, and year) represent a concrete system of time standards where each measure consists of units of previous one and forms the basis to create the subsequent measure. Therefore acquaintance of children to units of time measure has to be carried out in system and sequence where knowledge of any time intervals, capacity to their definition and measurement would form the basis for indoctrination with the following ones and open to children such essential characteristics of time as its fluidity, continuity, and irreversibility.

All tests should be built in the educational process and fulfilled daily. Studies without fail include the following means of materialization and action with them:

1. Lesson schedule which is discussed daily.

At the beginning of a test, a child is ordered to put the sun (which is cut out from paper) on a small square of the test beginning. Other child on the clock model moves arrows and all children pronounced time of the test beginning. The same occurs at the end of a test. A big clock is hanging on a wall; time of the test beginning and that of its end as well compliance of other actions with a schedule is constantly verified. When children are being trained to recognize parts of a day it is necessary to correlate the correct designation of each part (morning, afternoon, evening and night) to the corresponding period and teach to determine this interval by its characteristic activity and external signs.

2. The wall calendar where one child of a group (in turn) moves every day a small square and write down the date on a board. Depending on their abilities children can write down the date both in words and numeral format. When children being acquainted with a calendar, it is necessary to construct the system of tasks in such a manner that children consciously seize the time standards when they actively operate with model calendar materials and become familiar with the length of all offered periods. Among children, ability to determine the date by a calendar and especially call days of week is gradually formed.

3. A notebook – a diary for each child.

It is filled on weekends and reflects events of the child life. In his/her diary a child fixes an event which took place during a weekend and remained in his/her memory. Time of that event - morning, afternoon or evening appears as a conventional sign or a word. The special attention is paid to ability to show the event time – to picture a clock with the time mark, indication of the time when an event (for example, circus performance) had begun and come to the end. On Monday, the educational psychologist discusses the diary and impressions the child had received from an event. Specifics of work with a diary consists of that the value of time and communication of events with personal meanings is shown.

4. Tasks for independent drawing.

For example, on the topic "Winter Season" where a child is suggested to depict what he does in winter. Experience of time cognition is fixed in a verbal and conceptual form as standards – parts of a day (morning, afternoon, evening) as well as time measures (hours, minutes, and seconds). Thus, the ideas of the value of each time unit and their projection on the "I" (for example, morning bears a charge of cheerfulness, readiness for vital activity during a day) are being developed. Children learn to compare their subject experience with characteristic time properties (for example, cycling of events: birthday repeats annually, a child has become 1 year older).

5. Of special complexity in work with a clock is time with designation of minutes (10 minutes past one, fifteen minutes to twelve and so on). A transforming toy can help in understanding – there is no hand, so it is a robot without hand. To consider ‘fifteen minutes’ to…’ is possible to suggest by analogy. It is necessary to repeat such exercises several times and individually for each child. Purposeful studies to form of time concepts among children of the advanced preschool age were being carried out in separate groups of preschool institutions and the school preparation centers from 2009 to 2014. At the stage of control tests, the qualitative analysis of results was carried out. We had observed positive changes which happened in the course of pedagogical interaction of a child and a teacher. Children themselves fixed the beginning of studies, told about an event which took place for days off without any reminding. We often heard such phrases as ‘There is 10 minutes to the study beginning’ or " Please, give me 10 more minutes, I do not manage to finish drawing. ‘The comparative analysis of the data obtained during control diagnostics has shown that the level of the time concept development during studies had considerably grown. The positive dynamics has been shown especially earnest in groups where purposeful classes of the semiotic function development had taken place [13]. The higher results have been shown in the subject and practical activity of a child in cooperation with an adult arranged with the system of delayed actions. The delays or breaks, which caused in a child the state of expectation, readiness, search, updating of a previous or forthcoming operation etc.. act as the special methodical means of formation and identification of time concepts [6].

Thus, time concepts among children of the advanced preschool age are caused by mastering of sign system and reflection development. These processes are more effective at maintenance of the following conditions: attainment age of senior preschool children are taken into account; rhythms of child's activity in time on the basis of the daily reality arrangement are of fixed; there takes place inclusiveness in the events which are of large subjective and emotional importance for a child; the subject and practical activity of a child in cooperation with an adult is arranged on the basis of application of the system of delayed actions; the sign and symbolical activity of children directed to allocation and use of time standards is methodically arranged.

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