

MODALITIES TO STIMULATE THE MEMORIES OF THE PREADOLESCENTS FROM THE PERSPECTIVE OF THE CONSTRUCTIVIST PARADIGM

Liana TĂUȘAN, Ph.D
Technical University of Cluj-Napoca
lianatausan@yahoo.com

Abstract

Taking into consideration the new particularities of the pre-adolescent student's memory as well as the new educational requirements which the student confronts once he goes to the secondary cycle, the teacher must permanently train and stimulate a logical memory of the students and create optimal condition which ensure the students' proper learning. Although to this age, the memory gains logical virtues, there are cases of students learning by heart even in the preadolescence, risking situations of tiredness, having as result the diminishing of the capacity of memorization and of concentrated attention, also disinterest for the school activities. The present study aims to create an adequate strategy for the optimisation of the learning method of the students, according to the principles of the constructivist paradigm.

Key words: *preadolescence, constructivist paradigm, school adaptation, school learning*

1. Paper Rationale

One of the periods in which frequent difficulties of school adaptation are registered is pre-adolescence, especially the beginning of pre-adolescence, which coincides in students with the passage from elementary to secondary school and which on the foundation of a fragile emotional and psychic balance as well as personality in formation, numerous adaptation behaviors are assimilated and long lasting behavioral patterns are formed, which will be transferred in future activities.

Taking into consideration the new particularities of the pre-adolescent student's *memory* as well as the new educational requirements which the student confronts once he goes to the secondary cycle, the teacher must permanently train and stimulate a logical memory of the students and create optimal condition which ensure the students' proper learning. Although to this age, the memory gains logical virtues, there are cases of students learning by heart even in the preadolescence, risking situations of tiredness, having as

result the diminishing of the capacity of memorization and of concentrated attention, also disinterest for the school activities.

2. Theoretical foundation and related literature

The quantitative and qualitative modification of the requests and exigencies in the gymnasium school activity – the increase of the knowledge volume to be assimilated, the diversity of information, the contact with various teaching styles, requires for different intellectual activities – determines changes in the characteristics of memory, the formation of a more efficient learning style, adapted to the new exigencies. As results of the new requirements, the volume of the memory and its active and intentional character are developed (T. Crețu, 2001). The active character of the memory represents the attempt to transform the experience and the emotions according to the established objectives; it does not mean just reproducing exactly the information. The memorization knowledge is confronted with the necessities of the preadolescent, leading to a new organisation of the material in a superior form. Thus, due to the mnemonic processes, cognitive units are born, presenting a more complex structure comparing to the component information.

The specific forms of memory existing in the preadolescence are: the voluntary memory, the logic memory and the short time memory. Concomitantly with the increased capacity of the voluntary memory, the spontaneous memory is developed. There are researchers that consider that the peak is reached around the age of 11 to 13 (T. Crețu, 2001, p. 279). After the age of 12, the very exact, mechanical memory, characterised by memorising the information often without an internal, logical structure or without understanding the content of the material and using the very exact reproduction of the content of the lessons from the manuals, starts to be gradually replaced with the logic memory. Achieving the logic memory depends on reaching a certain level of development for the thinking and attention, in order to permit the observation of the essential in the context. This form of memory, a more productive one, is based on understanding the memorised content, operates with logical schemes and ensures authentic learning, with the possibility to transfer and use the information in various situations.

It is observed a modification in the attitude of the preadolescent toward the memorization process (U. Șchiopu, E. Verza, 1997). The preadolescent is preoccupied with the development of the capacity to observe the essential and reproduce the knowledge in original and clear forms, considering “learning by heart” a sign of intellectual weakness, despite the fact that has the ability to easily memorise abstract contents and things he does not understand.

The memorization, as a psychic process that permits the fixation, the conservation and the actualization (recognition and reproducing) the information and the previous experiences, presents qualitative and quantitative

transformations to the level of all its component processes. Although the active and selective characters of the memory are present from the fixation stage, the acquisition of information is achieved through a steadfast reproduction of the content, especially around the age of 10 – 11, when there was observed an increased capacity of memorizing meaningless words and images. Preserving information gains an active and dynamic character around the age of 11-12, when the preadolescent has the capacity to organise memorised information on logical criteria, to select based on the importance of the information what is to be memorized, creating a structural reorganisation of the previous materials and including it in new systems of connections. The preadolescent starts to acknowledge the importance of repetition as an efficient process of memorising and use it before evaluations (T. Crețu, 2001, p. 280). The reproduction, as a method of updating and connecting the previous information, is, in this period, dependant on the way the information was organised and structured during fixation and storage. The capacity of reorganising the information depending on the cognitive requirements is formed toward the end of preadolescence.

Analysing the report between memory and learning, R. Gagne describes the following four staged of the learning process (M.E. Druță, 2004, p. 60):

- the reception stage, when attention is given to a certain stimulation, differentiating it in perception from other stimulations;
- the appropriation stage, when the information is assimilated and the content is appropriated;
- the storage stage, when the information is preserved for a shorter or longer period of time;
- the actualization stage, representing the extraction of content from the memory, in a voluntary act, deliberately or in an involuntary unorganised act, in order to use it.

The actualisation may be realised in two modalities: recognition and reproduction. Unless recognition, which implies perception processes and a superposition of the actual pattern on the pattern from the memory of the subject, the reproduction is more complex, involving the intervention of thinking processes and a mental confrontation of the patterns with the aim of extracting the optimum one. R. Gagne differentiates inside the reproduction the remembering of verbal information from the actualisation of the intellectual skills, which require a learning transfer, because it solicits the manifestation of performances in new situations. The strategies used by the student in remembering verbal information are different from those used in the actualisation of the intellectual skills, aiming to: establish correspondences, connections and classifications, use rules and solve problems.

The fundamental problem in the learning based on the memory is, as I. Neacșu (1999, 2010) considers, not in stocking the information, but in actualising it. The factors that facilitate the retrieving of information are: the power of the

subject to dissociate, manifested at the moment of receiving the task to reproduce the information; the availability threshold of the cognitive structure, resulting from its concurrence with other formed or solicited cognitive structures, during the same period of time; the attitude of the subject in front of the didactic task; the psychological and emotional characteristics of the subject; the characteristics of the environment; the nature of the mediators in the memorization and the actualization processes – genetic mediators (supra/ subordinate ideas), thematic mediators (ideas that may be classified), mediators based on the report part – unity or unity – part; the methods and techniques used for the memorization and the fixation of the information.

Constructivist paradigm rehabilitates the student's role in learning, knowledge being specific to age, but also based on the own way in which the student integrates, explains and interprets reality, based on his own cognitive experience, in a first step, and then, moving toward objectification, based on collaboration, cooperation with the others (E. Joița, 2006).

Constructivist approach of knowledge and learning aims to achieve two types of objectives: students' understanding of highly-abstract concepts from different areas, but also the implementation of formative and educational dimensions (learning abilities, motivations, interests, attitudes, will).

Knowing and respecting the age and individual particularities of the students is one of the classical principles specific to the traditional didactics, which, together with all the others principles, contributes to an optimal achievement of the aims of the instruction process, serving to an instruction centred on the teacher and on the informational content and ensuring an exact, active and guided teaching. From another point of view, researches upon the constructivist approach of instruction identified a series of principles related to modalities of centring the teaching on the student, principles that may be considered specific norms for the application of the general classic principles. Thus, the numerous principles of constructivist instructions may be considered particularizations or application norms to the principle of knowing and respecting the age particularities of the students (L. Tăușan, 2012).

A synthesis upon the research and the contribution of the constructivist principles applied to education is offered by Elena Joița (2006, pp. 93-96), illustrating a variety of norms with a role in regulating the projection, the achievement and the evaluation of learning. They are presented under the form of prescriptions, recommendations and requirements, resulted after a generalisation process of the constructivist experiments in the classrooms. From the assemble of positions referring to the principles of constructivist education presented by the author (Lebow-1993, Jonassen-1993, Savery&Duffy-1995, Brooks& Brooks1999, Doolittle-1999, Boyle-2000, Colburn-2000, Bencze-2002), we chose to select a few contributions that, in

our opinion, may serve to a more profound understanding of the possibilities to apply the constructivism in the classroom work.

Principles of constructivist learning according to Dolittle (1999, cf. Joița, 2006, p. 95):

- Learning must be placed in real life situations;
- Learning is a result of social negotiations;
- Knowledge and skill are better formed in real experiences;
- The scientific knowledge using the understanding process has priority in front of the traditional teaching;
- The students self-evaluate their achieved formative level and their level of processes and competencies;
- The students are encouraged to correct themselves, to organise themselves and to reach the metacognition;
- The teacher is the person facilitating the learning, stimulates, encourages multiple perspectives and representations of the study content and offers multiple materials.

Adherence to the constructivist principle of instruction and learning is increasingly present in the Romanian education, after the major education reform, and it requires the knowledge and the implementation in educational practice of some basic dimensions of constructivist learning, which emphasize the student's central role and the structuring of teaching-learning-assessment, starting from the students' needs, abilities and experiences.

3. Methodology

The purpose of the research: identifying the particularities of the memorization/ learning modality for the students at the debut of the preadolescence, in order to propose strategies for its optimisation.

The objectives of the research:

O1: identifying the particularities in the memorization/ learning method at the debut of the preadolescence;

O2: identifying the difficulties of the preadolescent students during the learning process;

O3: proposing strategies for the optimisation of the learning method of the students, according to the principles of the constructivist paradigm.

The hypothesis of the research: knowing the particularities in the memorizing/ learning method of the students at the debut of the preadolescence permits the creation of adequate strategies for its optimisation.

Description of the instrument

During our investigation, we used a questionnaire destined to identify the difficulties in school adaptation for the preadolescents. We turn to advantage the item describing the manner the students assimilate information

during the 5th grade, using the mechanical memorization or the logical memorization.

Target group

The questionnaire was applied to a sample of 100 students in the 5th grade, during the first semester of study.

4. Results and discussion

Using the variable in the questionnaire referring to *the manner the students assimilate information*, predominantly through mechanical memorization or logical memorization, we obtained the following results (Table no. 1):

Table no.1: How do you learn, now, in the 5th grade?

	Frequencies	%
I mostly learn the lesson “by heart” (especially when I do not understand)	22	44.9
I mostly learn logically (I try to understand the connections between pieces of information)	27	55.1
Total	49	100.0

The data show the fact that the tendency of learning by heart the content of the lessons still persists during the 5th grade. Thus, almost 50% of the students affirm that they often learn the lessons using the mechanical memorization. The persistence of this habit may generate tiredness, the decline of the memory capacity and the decline of concentrating the attention, resulting disinterest for the school activities.

Considering the modifications in the school activity – the increase of disciplines and the increase of the difficulty of the content - is required a support for the students in forming a new learning style, adapted to the school exigencies. The teacher must deliver to the student a new style of intellectual learning, based on assimilating adequate learning methods and techniques:

- taking notes;
- modalities of learning efficiently in concordance with the volume of the content to be assimilated.

In order to avoid the situations when the students learn by heart, it is necessary to facilitate the understanding of the content of the lessons, establishing connections with the previous knowledge. The process of understanding is at the core of forming a logical memorization, favouring the durability of the knowledge. The integration of information in already existing conceptual systems ensures a solid understanding and learning. The possibility

of achieving the integration depends on the knowledge system the subject already possesses.

To facilitate the integration of the new knowledge in the system of the existing ones, the following are recommended (Salavastru, 2004, p.62):

- realising and using schemes to represent the relation or hierarchy of concepts;

- using analogies with similar contents acquired before;

- using pre-established organisers, which represent the ideas presented by the teacher before the system of knowledge which is to be assimilated, having a superior level of abstraction and generality, with the purpose of realising a pre-established orientation, making ideas more accessible, offering a general image on what is next to be learned.

The familiarity of the students with the techniques of organising the memorized material represents another condition for an efficient memorization:

- discovering the connections characteristic to the material to be memorized;

- understanding ideas in the text;

- formulating a series of questions – answers for the assimilated content.

To keep the knowledge its repetition is required, through an active participation of the student, which supposes:

- understanding thoroughly by realising associations with previous knowledge;

- establishing precise and varied goals for each revision;

- solving problems, doing applications, practical work, which require the use of the information assimilated.

The motivation of learning, its aim, represents another factor that can favour a serious memorization. From this point of view, the role of the teacher is to cultivate the intrinsic motivation, containing: the pleasure to study, the cognitive interest, and the desire to become competent in a domain.

The acknowledgement by the students of the results, of the degree of accomplishment of the objectives has a special importance in the self-regulation and the stimulation of learning activity. Using a continuous feedback, the students obtain the confirmation of their effort. For the evaluative act to contribute to the learning optimization, it is necessary:

- to centre the evaluation as much as possible on the positive results;

- to diversify the evaluation methods and techniques;

- to respect the same evaluation criteria for all the students;

- to put accent on the formative evaluation;

- to help students to understand the role of the evaluative act;

- to help the student acknowledging the requirements and the criteria of the evaluation, as a base in forming the capacity for self-evaluation.

5. Conclusions

All the changes from the preadolescence (biophysical, intellectual, emotional, moral, social) must be well known by teachers and parents to better integrate them in understanding the preadolescents and adopting the most adequate solutions in fighting the educational difficulties, especially in the period of entering the middle school. Knowing *the age particularities*, the specific of this stage in the development of the students, including resources, motivations, adaptation mechanism, psycho-physical transformations and their consequences, will avoid an overstressing the limited possibilities of this stage and will offer an improved understanding of the behavioural manifestations and reactions of the preadolescents.

Knowing the age and individual particularities of the preadolescent students is an essential condition of ensuring the instruction centred on students – one of the dimensions of the constructivist paradigm that rehabilitates the role of the student in education, considering knowledge as specific to the age and also based on an own model where the student integrates, explains and interprets the reality, based on his own cognitive knowledge.

Based on the above information, the most adequate strategies for the educational practice may be adopted, answering to the necessity of adapting the school to the necessities and the possibilities of the student, as a dimension of the constructivist paradigm.

References

- Crețu, T. (2001). *Psihologia vârștelor*. București: Ed. Credis, 279-280
- Druță, M. E. (2004). *Cunoașterea elevului*. București: Ed. Aramis, 60
- Joița, E. (2006). *Instruirea constructivistă – o alternativă. Fundamente. Strategii*. București: Ed. Aramis, 93-96
- Neacșu, I. (1999). *Instruire și învățare*. București: E.D.P.
- Neacșu, I. (2010). *Introducere în psihologia educației și a dezvoltării*. Iași: Ed. Polirom
- Sălăvăstru, D. (2004). *Psihologia educației*. Iași: Ed. Polirom
- Șchiopu, U., Verza, E. (1997). *Psihologia vârștelor*. București: E.D.P.
- Tăușan, L. (2012). *Dificultăți de adaptare școlară la preadolescență*. Cluj-Napoca: Ed. Presa Universitară Clujeană