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ACTIVE Learning 2

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MANUAL FOR IMPLEMENTATION OF ACTIVE LEARNING/TEACHING METHODS

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Ivan Ivić
Ana Pešikan
Slobodanka Antić

The authors of this *Manual* would like to thank all participants of the ALT project - teachers, secondary school teachers, inspectors/supervisors, and especially the **ALT instructors** for their constructive contribution. Without their effort and direct influence, neither this project, nor this *Manual* (especially the second edition), would be what they are.

ACTIVE LEARNING

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Bora Kuzmanović, Ph.D.

Authors:
Prof. Ivan Ivić, Ph.D.
Ana Pešikan, Ph.D.
Slobodanka Antić

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HOW SHOULD PEOPLE BE DEVELOPED
(from letters to A.M. and M.N.)

Novi Sad, October 21, 1872.

My dear friends,

A man who conscientiously wants to influence a development of another man, can act in one way only: to develop the strength of his/her thinking, teach him/her to observe the facts using his/her own mind and draw logical conclusions by himself/herself. Anyone who does not act accordingly, but wants to fill a man with his/her plans and advice, like baked cookies - that person can have in mind all other intentions, but to help the development of the person he/she is influencing. Such a "teacher" is either an irresponsible child who wants to satisfy his/her ambition showing off his/her "knowledge" and acquiring new "friends", or a scoundrel who wants to achieve his/her petty goals…

Svetozar Marković: Selected papers, Novo Pokolenje, Beograd, 1949.

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PART III: THEORETICAL AFTERWORD

PREFACE FOR THE SECOND EDITION

The first edition of this *Manual* was published in 6000 copies. Due to the nature of Manual distribution, all of the printed copies have found their way to the people they were intended for - teachers, professional associates, and others involved in the education. The copies of the book were given to the participants of the Active Learning seminars, as well as all interested for implementation of the active learning ideas, presented in the book, in their practical work.

This way of using the book, gave us feedback for the further development of the active learning ideas. In the couple of years following the first edition of the book (1997), the team of authors has continued to develop the presented ideas and methods of their implementation in the school practice, focusing on the feedback reactions of their colleagues working in the school practice and the readers of the first edition. One of the outcomes of that development is this second edition of the *Manual*, which is in the true sense revised and supplemented edition. Some of the ideas were somewhat changed as a consequence of practical implementation (they have become clarified, more specific, and finer in nuance). At the same time, a constructive and productive cooperation with a significant number of active participants in the Active Learning Project was a rich source of new ideas.

The majority of innovations occurred in practical implementation of the active learning ideas in actual conditions of several different socio-cultural environments (various regions of Serbia, Montenegro, Georgia). A positive response from the practice was a source of new modes of implementation of the active learning ideas (which could be found in this edition) and original methods for analysis of practical trials (scenario for innovative lessons, sequential analysis of the videotaped lessons). They prompted us to introduce the biggest changes and additions (including the problems of evaluating the changes) in the second section of the *Manual*, devoted to the practical implementation of the ideas. It could be said that thousands of scenarios (some have been published in various scenario collections for schools and regions), and thousands of performed lessons (many have been recorded on video-tapes, and in many lessons the sequential analysis was performed) are composing the real revised edition of this *Manual*.

This is a confirmation of what has been argued in the first edition, that this kind of project with extensive involvement of teachers is a kind of contemporary pedagogic folklore, i.e. a collective production of the new class of pedagogic culture. Now, when it is certain that this collective enterprise will continue, the authors hope that the second edition will become new, fresh impulse for acceleration, spreading and intensifying the process of changing the methods of teaching/learning in schools.

The Authors

INTRODUCTORY REMARKS

This book is not just for reading. According to its structure and purpose, it is above all, a practical *Manual* for the training of teachers and all others involved in education. However, this book is also a solid working tool, a reference book, for changing the method of work in our schools, as well as in other out-of-school educational activities.

The first version of this text, in a completely different form, appeared a long time ago (1994), as an instructional working material for a teacher-training seminar. Even then the authors were aware that a manual, which would be useful to teachers, couldn't be prepared in advance, in some Institute, by people who are not exposed to daily problems of teaching in unfavorable conditions that we have in our country today.

Being aware of this, we purposefully acted in the following way: the first version of the text was prepared, showing basic intentions of the authors and their fundamental teaching concepts. By doing this, the authors made clear that the texts were rather incomplete and imperfect (this also applies to the version presented here).

The first working version, as well as the ensuing ones, were subjected to the evaluation of teachers in the form of cooperative seminars, i.e., seminars where a working version of this Manual was used, and where the authors presented their still inadequately articulated ideas (e.g., what does a child's active participation in the teaching process mean or how should a teacher plan an "active" lesson). The texts from the *Manual* and the initial encouragement of the authors and seminar facilitators (not lecturers!) provided the fertile ground for ideas which were formed in the course of open and comprehensive exchange of experience and thoughts of people with various roles in education: class teachers, subject teachers, school psychologists and pedagogues, principals, school supervisors/inspectors, Ministry of Education associates.

Today we have behind us hundreds of such seminars and a large number of active attempts to change the teaching practice in our primary schools. The concept supported by the authors and the texts from this Manual has passed a practical test: several thousand people working in the field of education have evaluated them. Some ideas from these texts are already being implemented in many schools in our country. To say the least, these ideas have served as an incentive for starting to think about education, to think, partly, in a new way, to view the place of the child in the learning process from a new angle, to try to work in school differently.

Thus, all these texts are largely a joint result of all those who had been working on them, thus becoming a kind of a new educational folklore. In this interactive process with seminar participants, the authors realized that the professional experience of teachers represents an invaluable source of knowledge and experience on the process of school learning. A part of that treasure has been included in the present version of these texts. The authors are still firmly convinced that this treasury is richer than the existing theoretical knowledge about the learning process, just as the popular parental experience in raising the children is still more important than scientific knowledge in this field. Naturally, just like any centuries-old practical experience, the experience in the education of children, should be recorded appropriately, critically analyzed, and brought to the level of conscious knowledge of professionals.

The authors know how much they had taken from this source and how many new ideas were born in a dialogue between explicit scientific concepts from which they originated and the practical experience of teachers. As we sometimes jokingly said in seminars, the authors are establishing, together with the seminar participants, a "joint venture" into which each partner brings his/her professional experience, while the profit is joint and manifold. We hope that the biggest winners will be the children in our schools. This

method of creating a text - jointly, over a period of time, followed by practical testing - gives this *Manual* a greater chance of becoming an excellent reference book which will be equally used in schools having sophisticated equipment in large cultural centers, or modest village schools, surrounded by "local resources," whose value is priceless for the schoolwork which we propagate here.

We hope that this book will be useful as a practical handbook in teacher training and other school associated activities, as well as a working tool for changing the school practice.

Finally, it should be said that this *Manual* is a part of the "Active Learning Project", which is the result of the necessity to do something in our education in these difficult times.

The entire "Active Learning Project" is being implemented in our country, both in Serbia and Montenegro, thanks to UNICEF's support, which is financing the project implementation and enabling us to use the expertise of this UN Agency.

In implementing the project we had a full support of the Ministry of Education of Serbia and the Ministry of Education and Science of Montenegro. Both Ministries have included the "Active Learning Project" in their programs for in-service teacher training.

HOW CAN THIS MANUAL BE USED?

The use of the *Manual* for training teachers and other school associates is just one of the possible uses. In fact, the entire material is organized according to the module system, i.e., the *Manual* consists of separate entities, modules, which can be used individually and in different combinations. Here, just some of the uses will be mentioned:

- For facilitating a specific type of seminar for facilitators within the "Active Learning/Teaching" project, i.e. for the training the teaching staff (professional associates, teachers) that will, in turn, train others or work on the practical implementation of the Active Learning/Teaching in schools within further expansion of the project. The seminar program is presented in Appendix 5, while the appropriate units of the program are implemented according to the section *"How to Facilitate Cooperative Seminar"*;

- Seminars for principals and representatives of the Ministry of Education (supervisors/inspectors, associates of regional units, and different Ministry departments), other specific groups (see Appendix 5);

- Specific combination of the *Manual* sections has been used for seminars in a number of schools-regional centers for the "Active Learning/Teaching" project;

- *Problem Questions on Personal Teaching Practice*, can be productively used for a teacher self-analysis, for starting a discussion on teachers' roles or starting a debate on the "Active Learning/Teaching" project;

- Section *"Inventory of Teacher Roles in Instructional Process"* can be used for the assessment of the actual teacher roles in schools or for a debate on restructuring these roles (which should be enforced and why);

- Section *"Teaching/Learning Methods"* can be used in its entirety, or a discussion and training in school could be organized for a single method. For example, whether or not, and to what extent "learning by discovery" or "problem solving" are present and why. Does rote learning or "cramming" of the material which is meaningful exist (therefore doesn't have to be "learned by heart"), how widespread is it, why does it occur at all, and how can we eliminate this inappropriate form of learning/teaching;

- Section *"The Most Common Misconceptions about Active Learning"* can be used for initial presentation of the active learning ideas (in order to emphasize what is not active learning) and to interest people for the subsequent work;

- Section on educational workshops and *"Market of the ALT Ideas"* can be useful for teachers in preparation of scenarios for instructional situations, as a source for the lesson plan, or as a practical guideline for the preparation of the active learning/teaching lesson;

- Sections on written scenario analysis and sequential analysis of the lessons are a direct training for teachers to evaluate their own work and receive precise feedback information on what and how to complete, revise or change in teaching;

- Texts in the part Theoretical Afterword - *"The Nature of Student Activity in the Process of School Learning"* can be useful for people interested in theoretical afterword of the project, or preparing a lecture, discussion, or paper on some aspect of active learning;

- Even though the initial goal of this material was to be a reference for the practitioners, numerous educational questions have been discussed in this *Manual*

(what is activity, what is student participation, what is the connection between certain segments of education, what is the nature of the learning process, which mental processes are underlying certain activities, what are the criteria of efficiency of the educational system, and how can it be evaluated, what is the model of a desirable teacher, how can human behavior be changed, how to bring innovations into school practice, etc.), so it can be useful to the others involved in education;

- For specific school needs or specific student groups it is possible to make highly varied combinations of individual basic units - modules, therefore meeting the actual needs of these schools or student groups.

To summarize, the manual users are invited to put the offered basic units to an original and creative use, to design their own methods, which will suit their own, needs best. This kind of use corresponds to the spirit of our project that is not named "Active Learning/Teaching" in vain, but it truly expects an active attitude toward these texts from its users.

PART I

TRAINING OF TEACHERS FOR IMPLEMENTATION OF ACTIVE LEARNING/TEACHING METHODS

Introduction

The first and initially the only purpose of the *Manual* was to use it as a working material for facilitating a seminar on the training of teachers in applying active methods in the teaching/learning process. The development of the *Manual* as described in introductory remarks has necessarily led to the idea of the *Manual* being used as a workbook for changing the teaching practice itself. This is why there is a second part of the *Manual* as well.

Of course, the division into instructional work and practical implementation is partly provisory, since the teacher role in the educational process is such that any change, positive or negative, intentional or spontaneous, affects the teaching practice.

The teacher training for improving their professional activities is of course, extremely important. The training for a new, different method of work, for a new technology, is of crucial importance in teaching, just as it is in any other profession.

The fact that "technology production of student knowledge" in our school is outdated is a general object of criticism in regard to the existing situation. Our school has succeeded miraculously to avoid almost all impulses for changing its method of work, although in some places it has managed to modernize the school facilities, or to introduce relatively modern general curricula at some education levels, or to get a decent qualification structure of the teaching staff.

In such a situation, the need for modernizing the methods of educational work in our country is crucial and without it there can be no noteworthy progress toward raising the quality and effectiveness of our education.

Future teachers should prepare for more modern teaching methods. However, the pre-service teacher training in our country is such for all educational levels that it does not give much hope.

Basically, the entire "Active Learning/Teaching" project and its teacher training system are applicable in the pre-service teacher training, too. However, the situation being the way it is and the urgent need in the overall social crisis, which has over the past years fundamentally shaken the education too, - the teacher education system was primarily intended for teachers with teaching experience. This is where the system was tested - in training the teachers with basic education for their profession.

The ALP system of in service teacher training and the training of other school associates was largely used, for two purposes: training of facilitators, i.e., for the pre-service teacher training and in-service teacher training, training of the professional associates and supervisors (inspectors) who should take over its further development and expansion; for in-service teacher training with adequate basic education and teaching experience, so that they may try to change and modernize their own work.

The basic forms of such training were active and cooperative three-day seminars, where some serious and hard work occurred, instead of usual superficial listening of lecturers at the traditional seminars. Apart from the basic ALT seminar, in the meantime numerous other types of seminar have been developed (see: *"Various Types of Training for Implementation of the ALT Ideas (seminar types)"*).

EDUCATIONAL STRUCTURE

The aim of this text is not to describe systematically the educational structure, but to designate as accurately as possible the particular segment of education on which the entire Active Learning/Teaching project is focused.

When thinking about education in our country a narrow-minded approach prevails. Almost every time all discussions come down to the curriculum and, possibly, the textbooks. In contrast, in designing the Active Learning/Teaching project we started from a much more comprehensive understanding of education. (Results of such thinking are presented in the Scheme 1).

This kind of a comprehensive view of the educational structure is important for several reasons. The first being that in this way we get a clear picture of how far reaching is every attempt to introduce changes in education. For example, when a reform of curriculum is being done (in our country, that represents almost everything ever done in so called "educational reforms") then just a glance at the overall education, which is presented in the Scheme 1, can indicate that the achievements of such a "reform" will be very limited if some other important educational factors are not changed, e.g., financing, teaching/learning methods, pre-service and in-service teacher training, didactic material, etc.

Another major reason for having an insight into the overall education is that a comprehensive insight enables one to assess at any point what can and what cannot be changed. For instance, in the economic situation in which our country finds itself, one cannot expect any significant investments in modern school buildings and expensive equipment, and i.e. a fundamental limiting factor, which every proposal for educational reform must take into account.

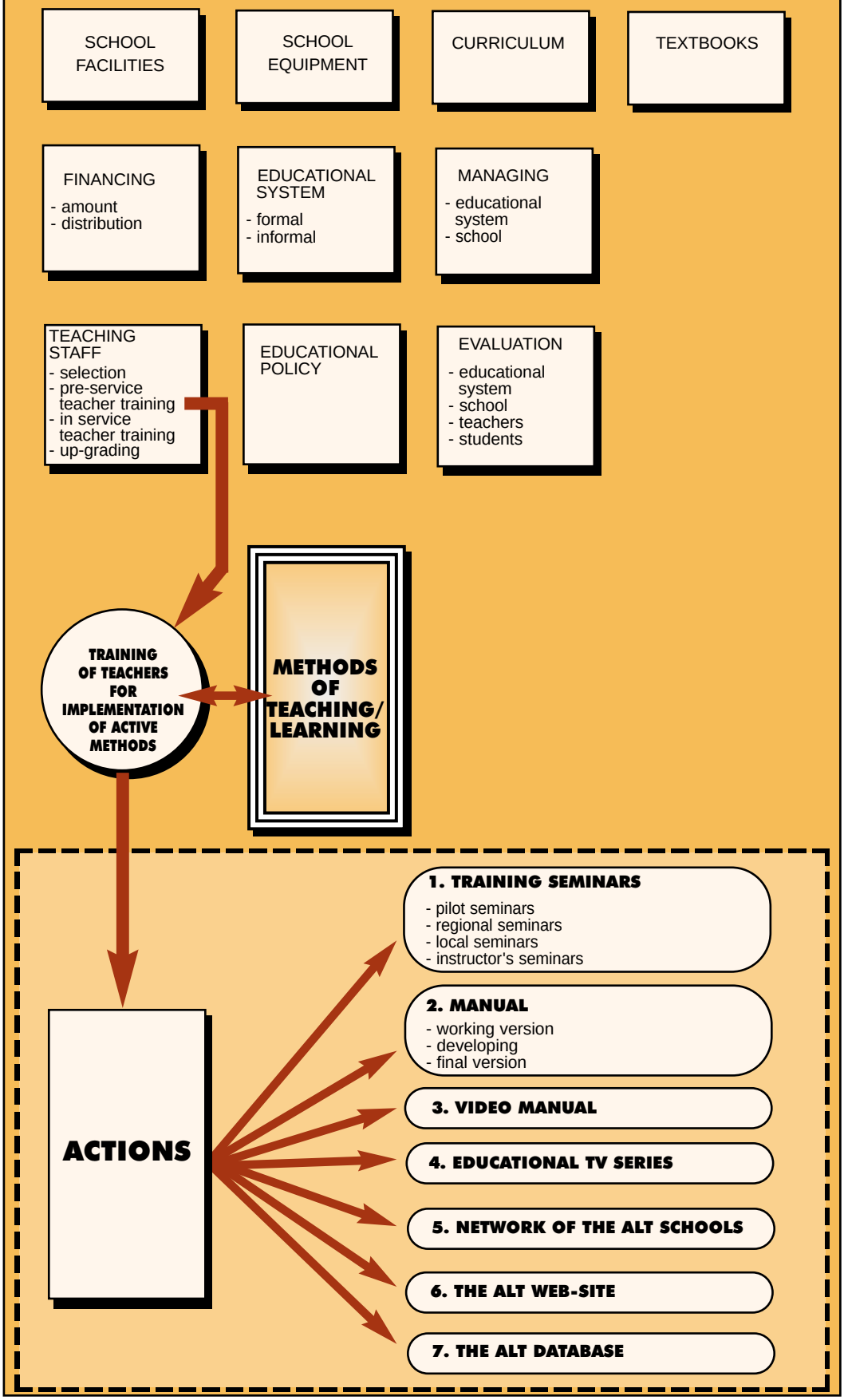
Led by such a general consideration on education, the Active Learning/Teaching project team has concluded that it is hardly possible at this point to change some of the most important factors, which determine the quality and efficiency of education in our country. Due to the economic crisis, we cannot expect any significant investments in education (however, the financing of teacher salaries can and must change, in order to avoid a further downfall of our education); any essential change of the general educational policy or a better and more comprehensive educational system, nor any improvements in its management are not to be expected.

In such a situation the Active Learning/Teaching project team saw the possibility to improve education to some extent by training the teaching staff. This army of approximately 90,000 qualified people is the basic available resource and lever for some improvement in the Yugoslav education.

In order to mobilize this important resource of our education it is necessary to settle the burning issue of financing the salaries of the teaching staff, and the Active Learning/Teaching project team has absolutely no power to do anything to this end. Another important condition for mobilization the teaching staff resource is the necessity to train the existing teaching staff to take up new roles. In Introductory Remarks we already mentioned that the technology of work in our schools desperately needs modernization.

Instead of the transmission school, which only conveys the knowledge from certain subjects, leaving the student in the role of a passive recipient, we need a new active school, which sees the student as an active participant. This means, on the one hand, that the attitude toward child in our school has to change fundamentally. The child cannot be reduced to the role of a mere student, instead in every age group and in every class, and in every educational process, the child must be treated as a complete personality, with preferences, affinities, motivations, needs, abilities and capabilities. On the other hand, teaching as a transmission of teacher's knowledge to student, has to be replaced by active, participatory, cooperative learning, i.e., the kind of learning in which the student appear as an active and constructive factor.

SCHEME 1: The structure of education



The result of this reflection is the focus of the Active Learning/Teaching project, graphically presented in Scheme 1. Hence, if we start with the qualified teaching staff as the basic resource, a well planned system of in-service teacher training for the teaching staff is necessary, primarily the training in more modern school work.

This is both an advantage and a disadvantage of the Active Learning/Teaching project. This is an advantage, because it is based on the assessment that our education has qualified teaching staff. The key problem is in the fact that the teaching staff is not familiar with modern active teaching/learning methods and does not know how to apply them, and that this shortcoming can be overcome by involving the teachers in active forms of training in the implementation of these methods.

A disadvantage is, as showed in the Scheme 1, that several key educational components exist which this project does not cover, such as, e.g., teacher salaries, management of school and education as a whole. Nevertheless, these "uncovered" educational components significantly influence the teacher behavior.

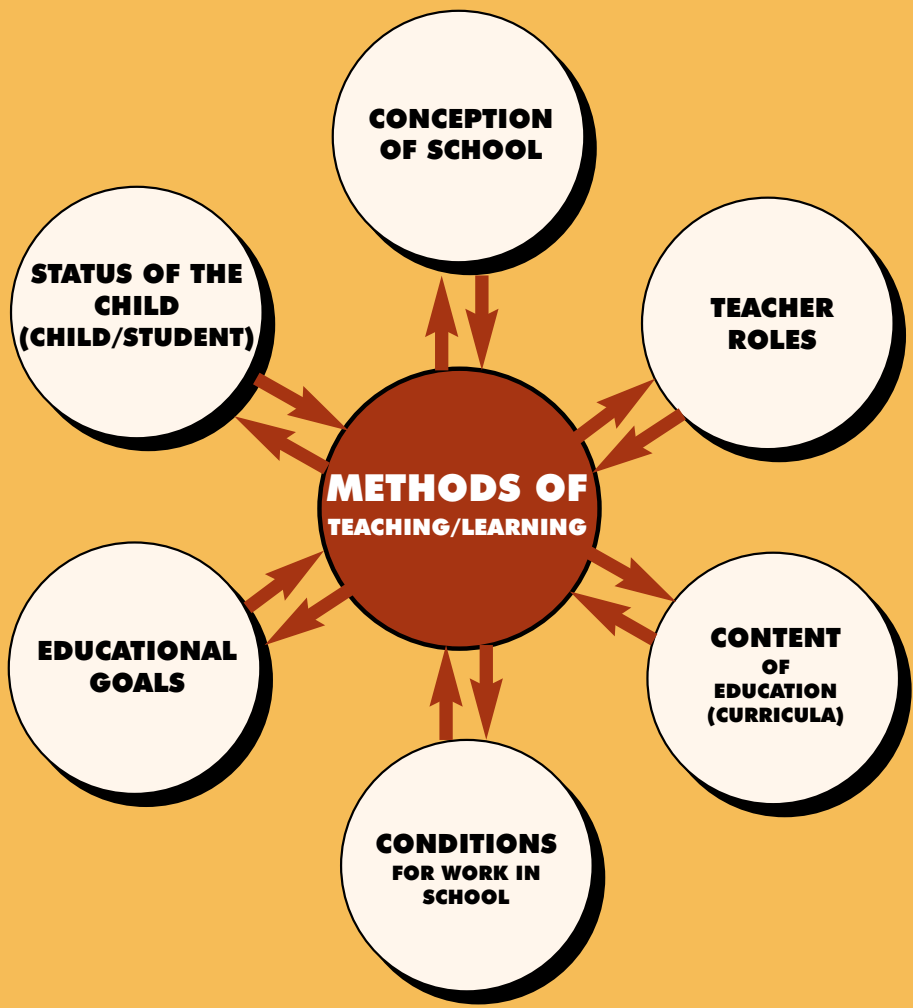
In the lower part of the Scheme 1 can be found the information on what the Active Learning/Teaching team has already accomplished, as well as the activities in progress, in order to increase chances for some changes in our school.

Scheme 2: *The Relationship between Methods of Teaching/Learning and other Parameters of Instructional Process* shows even more clearly the focus of the Active Learning/Teaching project. The main goal is to introduce changes in the teaching/learning methods that are used in our schools. This job cannot be done if educational methods are not linked to other parameters, such as the conception of school, the child status in school, and the role of the teacher… Hence, this project focuses on analyses of relationships between parameters shown in Scheme 2, and in the texts found in the *Manual* the ways of analysis of their complex relations have been operationalized.

…"If we have pledged so many times that the active involvement of children in education is of the immense importance, and if we are sincere in our wish for children to think, understand more, and memorize less, than we must search for concrete and efficient ways to move, motivate and activate the children."

Dusan Radovic, " On the Isle of the Desk"

SCHEME 2. The Relationship between Methods of Teaching/Learning and other Parameters of Instructional Process



A1. ACTIVE LEARNING/TEACHING (ALT)

In the (following) texts some information about the basic methods of teaching/learning will be presented, but form the specific angle - from the standpoint of active forms of schoolwork, i.e. the work in that the child/learner is being activated as much as possible. These texts do not make up a systematic textbook presentation form the field of pedagogy. They are working material, which could be practically used for the training of teachers and other working in education. This material is divided into to sections:

I) a summarized review of the opposition traditional - new active school

II) a short description of several basic methods of teaching/learning.

TRADITIONAL SCHOOL VS. ACTIVE SCHOOL

This text should serve as a simple didactic tool for starting a discussion at a seminar on Active Learning/Teaching methods. That is why this text is not a systematic/theoretical presentation on traditional and active school, and it does not describe the existing schools, but the extreme alternatives of these conceptions.

Basically this text merely defines one dimension according to which every existing school can be described. What we have here is an intentionally intensified confrontation of two different general conceptions, two views that can prevail in school.

Traditional school is based on a very old conception, but many of whose characteristics are still present in education in almost all countries. Its basic characteristics are: a curriculum and syllabi defined in advance; the aim of teaching is to acquire the curriculum; the basic teaching method is the lecturing (verbal transmission), with or without some didactic aids; the student role is to listen, to try to understand and memorize the compulsory academic subject matter; grading (in writing or orally) consists of checking to what extent the compulsory academic subject matter has been acquired; the motivation for learning is external (grades, praise, prizes-punishments); in school the child is treated only as a student, i.e. the person who should with understanding repeat the lectured material.

Active school in the original meaning is a school which is more centered and oriented toward a child who is treated as a person and not only as a student, i.e. different aspects of his/her personality are engaged in the instructional process. The basic characteristics of active "new" school are: a comprehensive curriculum defined in advance is not obligatory - only guidelines are given; the children's interest is taken as a starting point and the learning process is developed on the basis of this interest; the academic subject matter is connected to the child's personal experience; the learning motivation is personal, internal; the basic teaching method is aimed at increasing chances for gaining personal experience, i.e., active methods are dominant - practical, working, manual activities, expressive activities (such as drawing or literary essays), lab experiments, social activities, field work, observation of natural phenomena, etc. The aim of the active school is to develop the personality and individuality of each child, and not only to acquire a specific school curriculum. Children's satisfaction with the undertaken activities is assessed, as well as children's progress compared to their initial state, their motivation and interest in work and activities, and the development of their personality.

This sharp contrast for solely didactic reasons has been systematically presented in words and pictures on Poster 1, Appendix 1. *Traditional and Active School*. The contrast in absolute sense does not exist (except in some pedagogic experiments) but analyzing this opposition proved to be an excellent incentive for the reflection on ideas and attitudes toward school.

Out of presented description of the two types of schools the following can be applied in practice:

- abandoning some characteristics of traditional school (lecturing as the only form of teaching, students' passivity, grading only exact reproduction of knowledge, etc.);
- respecting the child in school, taking into consideration his/her age and individual characteristics, expanding the scope of teaching methods in the implementation of programs defined in advance, paying attention to child's motivation for learning, encouraging development as one of the learning goals, and not only acquiring the academic subject matter.

LEARNING/TEACHING METHODS

In this part of the text we have a very concise description of some forms - teaching/learning methods (the same forms from the point of the teacher are the methods of teaching, and from the point of the student appear as the forms of learning).

The pedagogic literature distinguishes between terms *forms* (e.g. group form of work) and *methods of work* (e.g. dialogue method). The classification of methods of teaching/learning presented in this *Manual* is different for the classical pedagogic classification. Contrary to the pedagogic classification, here **the forms and the methods of work have been integrated into a superior concept of methods**[1], i.e. how something is done. For example, according to this classification, we use the term *cooperative learning*, which combines a group work - working in pairs, with the dialogue method, i.e. students work in small groups/pairs, and that work takes place through dialogue, exchange, communication between the participants.

Methodos, gr. , the manner of action, a planed act for achieving some goal practically or theoretically (Klaic, B., Dictionary of foreign words and phrases)

The existing pedagogic theory and practice are entirely oriented toward the teacher, especially to what he/she does or is supposed to be doing during instruction. All theories of instruction deal with this subject, and with this aim, all curricula and lesson preparations have been written accordingly. The classification of the methods introduced here, deals primarily with how to organize the work in school so that the child in it is active in the highest possible degree. In other words, the description of these forms of the school work tries to show what we mean by saying that the child in school is active, the nature of that activity, possible degrees of activation, how do the kind and degree of the activities of the students depend on the nature of the school academic subject matter, on the conditions in the classroom, as well as the behavior of the teacher etc.

As you can see, defining the methods of teaching/learning is done on the grounds of five different dimensions. Those dimensions are defined with the help of two opposite poles:

a) **meaningful** vs. **rote learning**;
b) **practical** (learning in the sense of practical outside activities) vs. **verbal**;
c) **receptive learning** vs. **learning by discovery**;
d) **convergent** (logical) vs. **divergent** (creative) learning;
e) **transmissive** learning vs. **interactive** forms of learning;
f) methods of learning **without teaching aids** vs. methods of learning **relying on different aids**;

By using this classification, clear variations can be defined, but that does not exclude the possibility that in the classroom mostly transitive forms exist. We will describe the most common methods of learning/teaching in more detail.

According to the previously mentioned dimensions, the methods of teaching/learning have been classified in the following manner:

A. Meaningful vs. rote learning

A1) Rote learning (learning by heart)

A1 a) learning by heart of the meaningless material

b) learning by heart of meaningful material

c) "cramming" (learning by heart of the potentially meaning ful material)

A2) Meaningful verbal receptive learning

B. Practical vs. verbal learning

B1) Practical mechanical learning

B2) Practical meaningful learning

B3) Learning complete activities

C. Receptive vs. learning by discovery

C1) Problem solving

C2) Learning by discovery

D. Convergent vs. divergent learning

D1) Divergent (creative) learning

E. Transmissive vs. interactive learning

E1) Transmissive learning

E2) Interactive (cooperative) learning

E2 a) cooperative teacher-learner

b) cooperative in student groups

c) teamwork

d) modeling

F. Methods of learning according to the type and degree of teaching aids used

F1) Learning in lab

F2) Library assisted learning

F3) Learning by using local educational resources

F4) Computer assisted learning

DESCRIPTION OF CERTAIN LEARNING METHODS

A. Meaningful vs. rote learning

This is a fundamental dimension for differentiation of various methods of teaching/learning, because in schools we are faced with meaningful learning, but also with rote learning (literal, mechanical learning). Everything that goes on in the classroom and in the work of the students can be easily fitted in these two categories.

On the basis of this dimension it is important to differentiate the following methods of teaching/learning:

A1. Rote learning (learning by heart)

The main characteristic of this kind of learning is that whatever is learned is learned literally, the way it has been presented without any changes or understanding, without connecting the material with other knowledge or experience of the students. In practical work there are names for this literal learning, "cramming", "drill".

Activities of the students. The students are familiarized with the academic material (form) that should be learned, the main activity is the activity of memorizing, and the way to

achieve this, is by repetition and checking (alone or with someone, silently or loudly, sometimes using mnemonics[2]). The motivation for this kind of learning is weak and exterior.

[2] Mnemonic devices are various techniques we use in order to make process of memorization easier. An indicative example is when we want to memorize someone's phone number, e.g. 443-344, faced with the danger to get mixed up in all those 4's and 3's, simple thing to do is regroup: 44-33-44

Activities of the teacher. The teacher gives whatever should be learned in this way and checks adequacy of reproduction.

Variations of this kind of learning are:

A1a) rote learning of the academic material that can not be made meaningful: various names, telephone numbers, chemical symbols, etc.;

A1b) rote learning the academic material which can be understood, but for some reason it is necessary to learn it by heart - learning the multiplication table (understanding its development, that it is a short form for addition, if forgotten, "automatically" the answer can be reconstructed by adding), memorizing of verse, or texts for a theater performance, proverbs, riddles, certain terminology (if it's known how the name came about, its etymology and the connection to the phenomenon it denotes), etc.;

A1c) rote learning without understanding the academic material, itself meaningful, the student does not understand the material, as it was not made possible through the teaching process for him/her to do that. Thus learning by heart. This category ("cramming") is absolutely unacceptable as far as the goals of the teaching are concerned, but it is still very frequently encountered in practice.

The reasons for the continued existence of "cramming" in the school practice are numerous, and represent serious educational problems. For example, one of the reasons is the inadequacy of the academic material (not suitable for students' age, previous knowledge, experience, etc.), but also short allocated time for the unit (resulting in the vague understanding of the presented material), and insufficient time for assessing student knowledge (the teacher doesn't have enough time to make sure that the students really understand the reproduced material, especially when we talk about " hidden cramming", when even students "feel" that they understand the material). Sometimes teachers don't even want to check the students' understanding. One the one hand, they don't have the proper conditions to go through the problematic material in appropriate way, and on the other hand, the bad marks which could be given to students who really don't comprehend the material would result in an all out disapproval of all parties involved in education (other teachers, children, parents, principals, etc.). This could disrupt the "social game" of successful education. The goal of this "game" is making a deceptive impression of the satisfactory functioning of the educational system, and not a critical assessment of the quality of work and correction of its weak points.

The manner of assessing the comprehension of the academic material can further trivialize the verbal learning, if the students are asked to reproduce the material in the exact way that was presented (insufficient time, small number of lessons, large number of students in the class usually have as a consequence this kind of assessment). The manner of assessment, checking the knowledge, is a powerful tool for modeling the process of learning. That what teacher rewards with the praise or god mark, directly models the way in which students learn. For example, if an A is received for the fluent reproduction of the lesson, it will directly stimulate "learning by heart"[3].

[3] see: Pesikan & Jankovic, 1998.

The part of the guilt for the rooted practice of "cramming" bears classical psychological research on the process of learning. It had happened that the results of the lab researches of nonverbal, short-term, mechanical learning (which has very little application in the classroom), have been uncritically applied on the learning and memorizing of the organized corpus of meaningful material in the specific school context, which is quite different from the laboratory.

A2. Meaningful verbal receptive learning

This method is the core of the schoolwork, because it is the most frequent and necessary way of learning in regular schools (this is not the case with some experimental schools). This method is unjustifiably and crudely criticized, underestimated and equated with mechanical learning, verbalism, "cramming", "parrot reciting", mechanical memorizing of the isolated facts, and it has been treated as a "outdated remain of the discredited

educational tradition" (Ausbel, 1963, pg.15). Therefore, there is a great need for the rehabilitation of this form of learning.

Not a single part of this long and awkward name - *meaningful verbal receptive* learning - is nonessential or accidental. Every part of this name signifies exactly the key, distinct features of this learning method: verbally presented studying material, the material is offered in the completed, final form (that is why we talk about *the reception* of verbally presented subject matter), the process, as well as the result of learning are *meaningful*, and not *mechanical* by nature.

Meaningful receptive learning is much more than "simple cataloguing of ready-made concepts into the existing cognitive structure" (Ausbel, 1963, pg.20). Active listening is not just a physical registering of audio signals, but it includes the decoding of their meaning, selection of what is important, understanding of context and the relations in which the information has been presented, an attempt to arrange the information into the existing cognitive map of the student, with possible reorganization, enlargement and reconstruction of that map.

Table 1: Categories of the listening process and the criteria for their evaluation

Categories of the listening process	*Criteria*
Informative aspect of listening:	- careful, conscious, concentrated listening; - understanding of the linguistic meaning of what is being heard; - extraction of the main ideas, points; - paying attention to details while listening; - acquiring, remembering the details of what is being heard;
Evaluating aspect of listening:	- understanding of used terminology; - taking notes (selection, revision and organization of the material); - understanding of meaning and interpreting of what is being heard; - coming up with own examples and illustrations;
Critical aspect of listening:	- establishing the sequence of events; - predicting the effects; - drawing conclusions; - noticing discrepancies, variances, gaps in the information or explanations; - comparing with the previous knowledge and experiences; - making conclusions; - formulating own judgments, comments, dilemmas - revealing of biases, twisted interpretations, prejudices;
Social aspect of listening (immediate following and understanding):	- active participation in communication: posing questions, answering verbal or non-verbal; - reacting while listening (comments verbal/non-verbal, various emotional reactions: laughter, sigh, wondering, worrying, anger, etc.); - empathy with the speaker in accordance with socio-cultural conventions.

With meaningful verbal receptive learning, the most difficult is to establish the degree of the intellectual activation of the student. *The listening* is dominant perceived external activity, but we need the basic criteria for evaluating the efficiency of the student listening skill. Thus, we could extract several categories of listening and the criteria for their determination, which would give us the basis for possible construction and evaluation of the cognitive involvement of the students (see Table1).

Acquisition of the verbally presented material, therefore, is not reduced to the mere memorization, but includes more different activities. Firstly, the importance and adequacy of the presented material are evaluated. Afterward, there is an attempt to connect and reconcile the new knowledge with the existing one, especially if there is a discrepancy, gap, or contradiction between them. New statements are subsequently translated into a personal referent framework of the student, and they are harmonized with his/her experience, vocabulary, and composition of ideas.

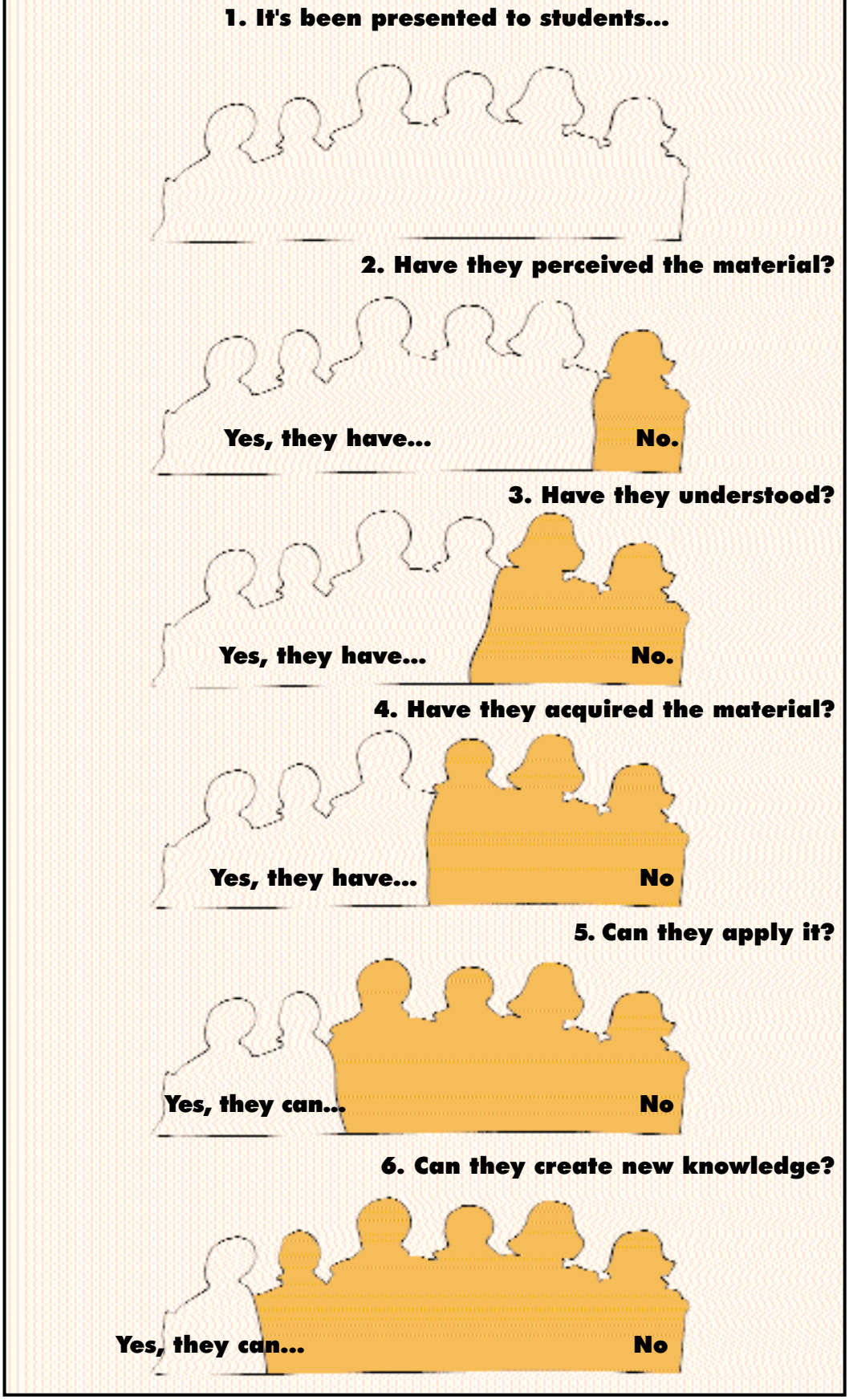
Conditionally, we could equate the meaningful verbal receptive learning and the best lecturing. This is only conditionally, because one term describes what is happening on the one side, the processes occurring within the student who is learning (meaningful verbal receptive learning). The other term describes what is happening on the other side, i.e. what the teacher is doing in the instructional process (lecturing). Of course, there does not exist a direct causal relationship between the two, i.e. whenever the teacher lecture, the student is in the process of meaningful verbal receptive learning, and vice versa.

Meaningful verbal learning can easily slip into the mechanical learning, and some circumstances are favorable for this. Whenever you have a lecture, an *ex cathedra* deliverance of the material, without previous establishment of the listener's previous knowledge, ensuring if they hear, follow and understand the presented material, there is a critical danger for something meaningful to become mechanical. Of the material presented verbally (lectured material), one part is left unperceived by the students, one part is not heard, and one part is hardly understood or applied in the new situations. Therefore, the "collapsing" in the course of the lecture gets bigger as the comprehension of the presented material becomes more complex (see Picture 1). The teacher who is aware of this must constantly provide different means for checking whether the lectured material really makes to the students, do they understand it, have they only reproduced the memorized, or are they capable to manage the acquired knowledge.

"Crammer, jr.": While learning, the brain is used only a bit (almost not at all). He remembers hard, but easily forgets…The brain is used for storing irrelevant facts: the crop of sugar beet per hectare, water level bulletins, phone numbers of all butchers' in town.

Jasminka Petrovic: "The School"

Picture 1: A review of the possible lecture breakdown



Receptive learning, according to its character is not a mechanical learning, because many concepts, generalizations, and principles, students could meaningfully internalize and use (transfer), not necessarily discovering them previously. The activity is mostly internal, mental activity, and cannot be made equal to discovery. Receptive meaningful verbal learning is a method of active teaching, in the best sense of the word, because it leads to intellectual (not just any, e.g. manual) activation of the student. Before the student acquires some meaning, firstly he/she must understand it, comprehend its meaning, and understanding of new meanings and their integration into existing cognitive structure is extraordinarily active process.

Therefore, it is not required for the verbal material to be "crammed". But, in order for meaningful material not to be studied mechanically, it is necessary to provide for one general condition: that the student, depending on his/her developmental stage and previous experience, can understand it. It could be claimed, that the main role of the teacher is to enable this understanding, i.e., to mediate between the material and the student.

In turn for the receptive learning to be meaningful, the entire organization of the instruction must be directed towards it. Unfortunately, there doesn't exist an ideal solution which would provide for this kind of instruction not to slip into verbalism and hidden "cramming". Meaningful verbal receptive learning is indeed a "high risk zone", and a lot can be done in order to lower this risk, but not to definitely avoid it. We will present just some of the actions that represent some kind of controllers, "lying policeman" in the struggle for keeping the meaningfulness of this method:

Teacher activities:

- Establishing of previous knowledge and experiences (facts, concepts, terminology, methods, etc.) which students have about the material to be learned, or is needed for the acquisition of the new academic material:
- Making connections with real life, out-of-school experience and knowledge of the child (i.e. what the "active school" really insists on);
- Connecting the already acquired knowledge about the academic material;
- Connecting the knowledge they already have in the other subjects;
- Showing that one phenomenon (concept, occurrence, person, object) is essentially the same as other familiar phenomena;
- Mental preparation of students for the new material by starting a lesson with the problem activity which will guide them into the central theme of the lesson;
- Presentation of the material in the form of problem, with the presentation/lecture itself being the answer to the question, solution to the formulated problem;
- Reconstruction of the path the science has passed on the way of acquiring certain knowledge (the way of thinking, how have the scientist been solving the problem, where that path has led them, what were the inevitable consequences of a certain decision, what was unsolvable, so they would turn to a new paradigm);
- Indicating the different strategies in dealing with the problem (formulation of the problem, focusing on the certain aspects of the problem…);
- During the lecture, demonstration of the stream of consciousness (thought process) with all the questions, dilemmas, summaries and decisions of what to do next;
- Encouraging students to ask questions as soon as something is unclear;
- Instruction should not be a presentation of the list of facts, but a choice, organization, presentation and transformation of the material from a certain academic discipline, in the way cognitively adequate for children, in order to form a clear, stable, unambiguous, organized and lasting system of knowledge;
- Presentation of the general context at the beginning of the lesson, and only after peripheral concepts and information. First, sketch the scientific field, subject, and only later the details should be worked out. When it is time for the details, the child knows their place, where to locate them, resulting in a stronger knowledge system. The advantage of presenting the big picture is that student can better understand the relations of each part

with other parts, has a better grasp on the totality of problem, and doesn't lose the key connections between the parts studied separately;

- Precise and correct definition of the concepts, with necessary emphasizing of the similarities and differences among the connecting concepts. Using not only the typical representatives of the group, but also bordering, atypical ones;
- Explaining the new word or a concept through the previously established known words;
- Assigning the new concept or a new expression to a higher category, or a wider occurrence;
- Training students to construct their own examples as an illustration of a certain phenomena;
- Applying different techniques in order to reach the same result, presentation of the material in various ways;
- Presentation of the same material from different perspectives, angles;
- Taking notes, demonstration on the blackboard how to make a backbone out of key information;
- Requesting from students to recognize the guiding idea behind some manifestation;
- Development of student self-criticism in judging whether the acquired meaning is the adequate one;
- Training students in differentiate between facts, hypothesis and interpretations;
- Insisting on distinguishing certain from possible conclusions;
- Training in writing reviews, abstracts, and summaries of the covered material.

Various procedures for assessment of understanding: in using the adequate manner for assessment of understanding of the material, the meaningfulness must be favorized. That means, it is important to distinguish the *reproduction* (reciting) from *recapitulation* of the learned material. One is happening as an associative series, while in the other case there is a logical sequentional structure, the facts and statements are connected into a meaningful construction, logically implied from the material. In checking of student understanding, it is necessary to ask for rephrasing of the material, to be explained in the context of student's own conceptual apparatus.

It is not easy to verify whether the receptive verbal learning is truly meaningful. Often, the only way to check if students have really understood the ideas capable of verbalizing is to give them a problem to be solved independently. However, solving a problem demands a lot more than good understanding of principles underlying the verbal formulations (reasoning power, hypothesis testing, flexibility, endurance, improvisation, research sensitivity, tactical intuition, etc.), so if someone fails at solving a problem, we can not conclude that he/she doesn't understand the studied material. The other way to check for understanding is to give a student a new incident, case, which assumes the understanding of the previously learned. In the text *"Guideline for Student Activation in Instruction"* other strategies are offered as well.

Activities of the students. If the teacher with the help of the mentioned activities creates the conditions, the student will be meaningfully (intellectually, internally) activated to his/her maximum: he/she will be asking questions (for himself/herself or in the classroom), he/she will seek the information or explanation, he/she will compare the new with his/her already acquired knowledge (school or out-of-school), he/she will draw up conclusions etc.

B. Practical vs. Verbal learning

Due to the lack of understanding of the nature of active methods, Active Learning/Teaching is very often reduced to those methods of teaching in which the child/student performs external practical/motor activities. This implies exclusion of active methods based on internal meaningful activation, as is the case with A2. This is the rea-

son why it is important to differentiate practical (external) activities from verbal activities (usually internal). Once this differentiation is completed and connected with the previous dimension (meaningful vs. automatic) the following methods of learning emerge:

a) practical mechanical;

b) verbal mechanical;

c) practical meaningful;

d) verbal meaningful.

The methods under b) and d) have already been described so that we shall describe the remaining two methods.

B1. Practical mechanical learning

Here we have the learning of all the practical motor skills which have to be strictly learned, such as: the tying of a tie, most of the skills learned in P.E. class (handstand, "the star", "candle", etc.), swimming, the handling of different technical equipment and instruments (e.g., riding a bicycle, driving a car, how to use a microscope, how to type on a certain typewriter, how to start a computer program - which keys and in what order to press them, but also how to handle a pencil, ruler, pair of compasses, etc.). This form of teaching/learning is meaningful as a part of some broader learning, in which the motor skills will be used only as a necessary part, for example handling the equipment and instruments in a lab in performing an experiment.

The activities of the teacher. The teacher gives the instructions about the things that should be learned, he/she gives the form of the skill, to be learned, performs the activity in front of the students, supervises the practical work of the students, and corrects the students when necessary.

The activities of the students. A minimal understanding of the skills being learned is necessary, the main activity of the student is practice (practical performance) of the skill in question, correction the mistakes, the technical improvement of the skill.

B2. Practical meaningful learning

This encompasses all the methods of learning in which a certain activity is practical (in the sense of external, motor activities), also an understanding of the sense of practical tasks is necessary. Simply, the difference between this form of learning and the form of B1, is the difference between one user of an appliance / a device / an instrument (all of us that use cars, the TV, the video, the washing machine, the refrigerator, the computer are those users) and an expert, who knows what is behind the automatic movements made by users.

So here we have the learning of complex practical skills with the understanding of their meaning: the learning of the technique of drawing and painting; playing a musical instrument; doing experiments in a laboratory; the learning of the techniques of observing nature, making electrical circuits, drawing maps by using cartographic signs, technical drawing, etc.

Here we also have a very important category of learning - the learning of common methods (procedures) acquired through practice: various standardized methods of exploration (journalistic methods - interview, questionnaires, surveys, etc., standardized methods of lab analysis), which are characterized by practicing various previously established methods for applying knowledge (technological procedures, researches, etc.). But the learning of non-standardized, new methods, acts, and procedures does not come under practical meaningful learning. (See this under *"Learning by discovery"* and *"Divergent (Creative) Learning"*).

Activities of the teacher. The organization of the process of teaching and the preparation of the conditions for this kind of learning, the demonstration how this type of practical activity is carried out and controlling the process of learning.

Activities of the students. Understanding the meaning of practical work i.e. methods which are learned, performing practical work, technical and methodological improvement of the learned matter, improving correctness, speed and precision. Shortly in these activities the students get to know how things are done according to the already acquired knowledge.

Generally speaking, grading the achievement in this method of learning can be accomplished by checking of practical performance of what has been learned, with the assessment of the understanding of the performed activities.

B3. Learning complete activities

The learning of the complete activities is a specific kind of learning, which combines practical and verbal learning, knowledge and skills in such a manner, that not a single part can be left out. This method of learning includes all those professions in which the practical aspect is a very important component (different crafts, trade, technical professions, practical medical disciplines like: dentistry, surgery; the complex activities of artists, journalist, programmer, machine constructor, electrical engineers creating the new technologies, telescope construction, etc.). This is a very specific method of learning, with intellectual and practical (manipulative) parts being equal, essentially intertwined. Thus, the entire activity is unthinkable if both parts are not equally good developed, connected and integrated. For instance, for surgical training, it is necessary to have both fundamental and specific knowledge from medicine, but the practice of a surgeon would be impossible without well-acquired practical skills (skillful handling of the scalpel, scissors, curette, and other instruments, to know how to make an incision, treat, and sew the wound, etc.).

This method of learning in the primary school is not encountered in its entirety, but in "fragments", because it presupposes greater maturity, knowledge, and experience, which is more suitable for the higher educational grades. Primary schools encounter this kind of learning mostly in physical education, as well as in lessons of art and music. Also, when students express themselves in their mother tongue (accepting the technique of written expression, learning some forms of journalism, and learning the methods for analyzing literary works).

Activities of the teacher. Apart from preparing and organizing the process of learning, the main role of the teacher is to practically model (show patterns) complete activities, as well as to continually follow practical performance by the child/student, and to correct mistakes and demonstrate again the complete or parts of the activity being learned.

Activities of the student. This form of learning is very active. The one who learns must acquire knowledge so to understand the meaning of a certain activity and to perform it, correct the mistakes and improve the technique of performing until it becomes a routine.

Nevertheless, this form of learning differs by its nature of activity from learning by discovery and divergent creative learning, because in B3 everything is learned in a preset pattern, and there we have independent and creative discovering of the new.

C. Receptive vs. Discovery learning

Every learning can be seen as receptive in which the task of the student is to acquire (accept) certain knowledge or skills, "predetermined", mostly by the curriculum. So, a person who learns does not discover, i.e. he/she does not acquire knowledge individually, but he/she literally (mechanical forms of learning) or with understanding in his/her own way acquires and accepts (meaningful learning). It could be said that the methods of receptive learning are by far, the most common within the school learning (especially in the primary school). All methods of learning (according to A and B dimensions), discussed so far, are the part of the receptive learning category.

On the other side, there are some forms of learning in which individual knowledge acquisition is learned. For example, in field instruction the students collect samples of plants and animals and they try to sort them out into taxonomic categories; or in the math problem solving, the students themselves have to find out the mathematical procedure needed for the solution of those problems; or when performing experiments with pendulums of different lengths and weights, the students themselves have to discover the laws of physics on which the frequency of the swinging of the pendulum depends.

The learning is a very complex phenomenon, which cannot be assigned a simple model of explanation. The attempts to discover the ideal model of work, an optimal method of schoolwork, were misleading to the kind of selectivity: instead of receptive educational learning methods, we shall use learning by discovery. Essentially, this is a kind of confusion created by combining dimensions meaningful - mechanical and receptive - discovery (problem solving).

The receptive learning and learning by discovery are according to their nature and the processes involved, two fundamentally different types of learning. With receptive learning, we are talking about acquiring of the ready-made knowledge, presented verbally, which need to be learned meaningfully, internalized in such manner as to be useful later, in other contexts. The main characteristic of the learning by discovery is that the target of learning is nor given to the student, but he/she must discover it individually. Therefore, in the first phase of the learning by discovery, it is necessary to rearrange the data we have, recombine them, in order to discover the searched relation or product, which is afterwards internalized the same way as with the receptive learning.

Apart from this, the roles of these two types of learning in intellectual development and cognitive functioning of children are completely different. The majority of the academic school material acquired, has been *presented* to us, we haven't discovered it. Nevertheless, problems in everyday life are solved through discovery. The overlap is obvious between the functions of receptive learning and learning by discovery: Knowledge acquired through verbal receptive learning is widely used in problem solving. And problem solving is widely used when it is necessary to apply, generalize, integrate, and assess the knowledge and understanding of the certain subject matter. Exactly because of this, it is sometimes difficult to draw the exact border between the best aspects of meaningful verbal receptive learning (A2), and problem solving (C1). The techniques of discovery are not the efficient way for the transmission of the materials from a certain academic discipline, but are efficient means for acquiring new knowledge. In receptive learning, the existing knowledge can be received, but the new knowledge cannot be created[6].

The methods which include the learning by discovery, certain goals of education are achieved, such as the forming the autonomy of the students in the intellectual work, forming of the ability of individual problem solving, finding out how discoveries are made in science, developing abilities for simple research, developing abilities for application of knowledge in the new situations, development of motivation, etc. The purest methods of teaching based on learning by discovery are instructions in research, projects, etc. Those forms in primary schools can be found only in elementary form, and they are more components of other methods of teaching than individual forms.

[6] Amusing illustration of the relationship between receptive learning and discovery learning is the following anecdote: "The son asks the father, who is more clever, who knows more - the son or the father. The father answers that father knows always better and more than the son. Than, the son asks who discovered the steam engine. James Watt - answers the father. Why, than, his father hasn't discovered it? - commented the son."

C1. Problem solving

This is a typical method of teaching/learning in which the studying material is not given in the final form in which it should be learned (as is the case of receptive learning). In problem solving we start from the problem situation (e.g., from the student's question "and who comes first in history, the Romans or the Indians?") and the students look for answers individually, in pairs and groups.

This method covers the entire scope of tasks for problem solving, from the simple ones, where the flexible application of the studied material (where student is in position to decide what from the studied material to use in order to solve a problem) is needed, to very complex project problems (which in turn, can also vary in difficulty, depending on the age and level of schooling). Easier tasks in problem solving are, for example, solving math problems, correcting grammatical mistakes in the given text,

and establishing a genre of the given text. Somewhat more complex tasks include the connection of knowledge from various school academic subjects, with students making the connection themselves, solving different problem situations in everyday life.

So, the characteristics of the problem situation are:

a) elements of the situation are known;
b) elements are not known;
c) clarity of the problem;
d) the students themselves find out methods for the solution of the problem and its assessment.

When we talk about the more complex types of the problem solving instruction, e.g. doing projects, the key point is the degree of problem structuring, reflected in the amount of options left for students, as well as the availability of the material (has it been already prepared, or do students have to obtain it themselves). This way we can distinguish between the structured and unstructured project assignments. In the former, the choice of the project topics is limited, but the majority of the materials need for the completion of the project has been provided. The teacher assigns the topic, with the task (still students do have some freedom of choice) and the methodology for gathering and analyzing data also being specified (this type of learning is characteristic for the lower grades of education).

In unstructured project assignments, the students independently choose the topic, and obtain all the necessary material. The students independently design, perform, analyze, and present the results of their work, based on the topic they had chosen themselves, and using the data obtained unaided. The third type of problem solving can be discerned as well, the *semi-structured* assignments, with the research area and methodology being given, but the nature of work is such, that it asks of students a lot of independence and responsibility in learning. For instance, many historical sources and modes of their use are offered to students, with the task of choosing the key three sources for doing the case study, i.e. giving the best interpretation for a certain event.

Apart from the task structuring, there is one more important dimension for distinguishing problems: are we dealing with the real (life) problems, or simulation projects. In the real, existing projects, students deal with actual problems (tasks), helping to solve an actual problem in the real - life situations. In performing simulations, the teacher offers data, which students analyze, practicing solutions for this type of problems.

The project can be done individually or in groups (in pairs or teams), but what is important to bear in mind is that the students must be previously trained for this kind of instruction. This method of learning is more adequate for the older students (final grades of the primary school, secondary school, university, professional training).

Despite the fact that the problem solving instruction is demanding (requires more time, better working conditions, additional costs for the realization, previous preparation, training for this type of work, etc.) there are very important reasons for creating conditions for its application in the school practice (see *"Learning through projects as an active learning method"*).

Essentially, in this kind of learning, the acquisition of knowledge is not the primary goal, but the development of skills, methods, and techniques for facing and solving the problems. Moreover, the goals of this instructional method are encouragement of the student initiative, and the formation of an attitude that the majority of situations facing the children in school and life are problem situations, which shouldn't arise fear, but active involvement. It should be emphasized that by practicing problem solving, the independence in performing intellectual tasks are developed.

Activities of the teacher. The degree of teacher interventions in learning by discovery and problem solving can vary: from giving a full, open support and help, to very discrete guidance of the process, from discreet monitoring to partner work on a joint problem in teams with students, becoming an interactive method of work.

The roles of the teacher in guiding the process of problem solving are very complex and delicate. First of all his/her role is to evaluate how difficult the problem is, bearing in mind the intellectual, educational and motivational level of the students, or to make a good

selection of the questions the students ask, regarding the problem. If the problem is too difficult or too easy, its pedagogic value will be small. The role of the teacher, while guiding the problem solving, is the most delicate and responsible. The teacher can get involved in that process so much that the students only have an illusion of solving the problem. Not being involved enough can create an additional problem, i.e. students might be at loss for too long. The teacher's involvement in the course of work could be: rephrasing the question, asking a new question, stating a hypothesis and discussing with the students, introducing a new fact, suggesting a certain approach, as well as alert following of student activities.

Activities of the students. This form of learning challenges the students to use very complex and meaningful activities - noticing, defining and specifying the problem; asking oneself and others relevant questions; taking over the initiative for problem solving; planning the solution; individually collecting and analyzing the facts needed for the solution; individually reading the texts and making notes about what is needed for the solution of the problem; giving ideas for the solution of the problem; individually discovering techniques and methods for the solution of the problem and checking the same; being ability to discuss the problem with the teacher and other students; ability to share with the others about the reached conclusions; the ability to write reports.

With the problem solving method, especially in teaching through projects, sometimes it is difficult to evaluate, i.e. grade the results of this instruction. Firstly, because it asks from the evaluator to use the same standards for a very wide scope of diverse projects (the problem of harmonization of the criteria for evaluation of different projects). There is a substantial disagreement between the authors who should evaluate the work: the mentor, who supervised student's work, or an independent evaluator. Here we come to the third dilemma about the grade itself: what is precisely graded, and what part should it play in the final mark? Are we grading just the result, or also the way of work: process, procedure, technique, choice of methodology, the choice of topic (is it lucid, interesting, the significance of the problem, i.e. not a school or superficial problem), the complexity of the performed task, the ability to connect and apply the learned material, the repercussions of the result, presentation of the result (the manner, form, and quality of presentation), student initiative, independence, and quality of team work (level of cooperation, atmosphere…)? Depending on what we think that should be marked, which are the elements of the given mark, depends who the evaluator should be (i.e. certainly, the evaluation of team work should be done by the mentor, who supervised and watched the group as they had worked and solved the problem).

C2. Learning by discovery in a more precise way

Under this name we often find a description of the teaching method very similar to the problem solving. In both cases things that are learned are not given in a definite, final way, but the students themselves get to know things. At the same time, in both cases, the main goal is to acquire certain skills (methods, forms of intellectual activity), and not the achievement of a certain amount of knowledge.

We could say that learning by discovery in the more precise way is the specific type of problem solving. The clearest difference between problem solving and learning by discovery (in a more precise way) is that learning by discovery applies to the *independent inductive*[7] *acquisition of knowledge*, and the problem solving takes into account all other problem situations. In this sense, the purest form of learning by discovery is experimentation, i.e. the solving of a certain problem by using individual imagination and performing the experiment. This is very often, a classroom rediscovery of the truths already existent in science. But, in this rediscovery, the students individually quickly reconstruct the process of getting to the discovery, already made in science. For example, the students engage in an experiment in order to prove what does the rate of the growth of the seeds depend on, so they apply different levels of humidity, light, etc.

Here we also have independent inductive formation of concepts (from recognizing specimens of one class of plants to the definition of the same class), learning the technique of class definition, independently defining the category of literary work based on familiarity with other literary works belonging or not belonging to the specified category.

[7] Inductive reasoning - the way of thinking from the particular to general, i.e. from the particular instances the general conclusions are drawn

Activities of teachers and students and the problems of grading in this form of teaching are almost the same as they are with the previous (problem solving).

D. Convergent (logical) vs. divergent (creative) learning

The difference between these two forms of intellectual activities and these two methods of learning we shall explain best with an example. While solving the problem of vehicle construction supposed to be used for moving around the Moon, the scientists went through two phases. The first one was - to come up with the idea of how that vehicle should look and the second was - the technical realization of that idea. For solving the problem from the first phase, the method used was a completely free, non-censored popping of ideas, even if they seemed absurd, i.e. brainstorming. So, they came up with the ideas like: vehicle should have wheels like a car, it should clear its own way (like a tank with caterpillars), it should float in the air, it should walk, jump, etc. The second phase was to construct the vehicle according to the strict technical and technological demands.

So, in the first phase the divergent, or lateral, creative thinking was used. It is the form of intellectual activities in which it is important to create a great number of ideas, as original and unexpected as possible, to have the flexibility of thinking, the discovery of alternative ways of problem solving etc. Simply, this form is more frequent in the artistic work, but it is essential in many phases of the scientific work.

Convergent thinking is based on strict rules of logical reasoning, i.e. the logical and strict consequence of intellectual activities, which inevitably leads to one and only right solution. As an example we can take algorithm for solving the particular class of mathematical problems or the way the computer solves problems (e.g., the way it plays chess). If we revert to the previous example, after the phase of listing of all the possible and impossible solutions, we resort to the second phase of testing of particular solutions, and directing our attention to a single solution, specifying and developing a certain solution which seems the most appropriate for the given conditions (convergent thinking).

All the above described forms come in the category of convergent thinking and convergent learning, except the method C1 (problem solving) and C2 (learning by discovery), which combine convergent and divergent thinking. Therefore, we will describe the only method of learning which is new compared to all described until now.

D1. Divergent (creative) learning

In the classroom, this method of learning is more frequent in the artistic group of subjects. The following are some concrete forms of divergent learning in school life: writing of an essay to a given topic or according to a free choice, painting scenery with water colors, but in the way that every student makes his/her original painting, independently performing literary work, original interpretation of music piece or elementary composing, inventions in technical disciplines, stating a great number of ideas for the solution of a certain problem which came up in class or school etc.

Divergent, creative abilities of the student will be expressed fully in all tasks which require original and authentic presentation of data, introduction of the certain event, presentation of the solution (individual or group), organization of the offered elements, hence, in all situations where there is a space for the independent choice, decision making, and coming up with the original solution. Obviously, this method of learning appears as a necessary part of the problem solving process (e.g. creation of ideas how to obtain data, creation of hypothesis, for preparation and presentation of data), which is just another illustration of the natural coming together, combining, and "overflowing" of teaching/learning methods.

The goals of this form of learning are prompting of initiative and independence, taking care of creativity (capability for finding own and original solutions, capability of producing numerous and varied ideas); prompting of innovations and inventions.

Activities of the teacher. The main task of the teacher is to provide favorable conditions for introducing composed atmosphere, considering all the ideas even the strange ones at first, to show an interest for things that are original and individual, to restrain from criticism and favoring for some ideas etc. If there is a lack of such teacher's attitudes, then it is obvious that true forms of divergent creative learning (like writing a free composition in the mother tongue) become stereotype work that teachers like the most (this stereotype is clearly discovered by students).

Activities of the students. In this type of learning some individual characteristics become outstanding (initiative, independence, independence of the spirit, readiness for doing something i.e. atypical for a given community). The main activities of the students are already mentioned main divergent processes: producing the great number of ideas; inventiveness, finding of unusual, original and rare solutions; flexibility in thinking; tolerance for contradictions and simultaneous coping with the ideas that are not logically connected; sense for paradox etc. Grading in this type of learning is more of a grading of some creative characteristics of the person and attitudes, and partly it is grading the level of the creativity in the process of solving or in the product of the activity. If this is lacking, than this type of learning can be lost at start.

E. Transmissive vs. interactive learning/teaching

When we talk about the transmissive (frontal, lecturing) instruction, we think of instruction where one-way transmission of knowledge from the teacher or a knowledge source to the students is dominant. If we look at the names of all the previously described methods of learning in this text, we will see that they've been formulated from the viewpoint of the student, i.e. they describe a process happening on that side of the dyad learning/teaching. The expression "transmissive" defines the viewpoint of the teacher: that he/she is transmitting, delivering "emitting", presenting the knowledge that has to reach the students (receptors of that knowledge). When talking about the transmissive instruction, seen from the viewpoint of the student, undoubtedly we talk about receptive methods of learning.

But for the understanding of nature and importance of these different methods of teaching/learning, it is important to understand, on the one hand, the position of students in these forms of learning and, on the other hand, the nature of the processes of learning that take place in those methods of teaching. For instance, if you take "work in small groups", a description of the class during this form of activity is given, but nothing has been said about what is really happening within groups, the proceeding of the learning process (who learns, from whom, in what way, etc.). The intention of the following text is defining the nature of psychological and pedagogic processes during these different forms of learning.

Basically, the process of school learning is by it's nature an interactive process, because it involves two completely different partners - the teacher and the student, gathered around the same goal - acquiring the system of the new knowledge and new competencies. This is the reason why we use the expression teaching / learning in this *Manual*. This is the only way to express that interactive nature of the process of the school learning and the presence of the both important partners: the teacher, through the expression teaching and the student, through the expression learning. Contrary to this position, the expression teaching is used the most often, or the theory of teaching, and by doing so this interactive process is reduced to only one partner, and that terminological "lacking" is not accidental at all.

But, in spite of this natural and, we might say, unavoidable and unconcealed interaction of the educational process, in practice of organizing the schoolwork commonly the deformations with far-reaching consequences emerge. The school practice is able to cancel out the interactivity of pedagogic work and to reduce it down to the single player's game - the teacher.

Therefore, it is justifiable on the dimension transmissiveness - interactivity, to identify several methods of teaching / learning, which are very different by their nature and results they give.

E1. Transmissive learning

It is often said, with the best intentions, that teaching is a process of knowledge transmission. But even the mere transmission assumes indisputable reception of those who are learning, because there is always a question whether the knowledge was really passed on. Are there readers who do not know from their own experience what a plenary lecture in a big lecture hall looks like, where lecturer is not familiar with his/her audience (it's ability level, previous knowledge, motivation for listening), so he/she just lectures in front of the silent audience, which doesn't have ability to influence the lecturer in any way. Paradoxically, in these situations pedagogic process looses it's basic characteristic - interactivity!

Transmissive learning, in this pure form, can be found frequently in our schools. Especially if **hidden** forms of transmissive teaching are taken into account. For example, during a typical lesson, when a new academic topic is introduced, teacher usually completes lecturing, without allowing students to interrupt during the lecture, without checking if they understand the basic concepts, and then for the sake of appearances, asks students if they have any questions. Obviously, students understand that the show is over and asking questions is of formal, ritual nature, and as a rule, they do not ask any questions.

So, in all those situations when the other partner - the student is not taken into consideration, and that means: readiness for the acceptance of the new topic is not verified, there is a lack of motivation or interest for the new things. The links between previous and new knowledge are not created, atmosphere for asking questions is not favorable, and it is not checked in any way if the students understand lecture. This way, we have, more or less, pure forms of transmissive teaching. The essential interactivity of teaching process is reduced to a one-way process from the teacher to the student, without any guarantee that transmission of knowledge has occurred.

Activities of the teacher and the student in these methods of instruction have been mostly described in the section A2 - meaningful verbal receptive learning.

E2. Interactive (cooperative) learning methods

Meaningful verbal receptive learning (A2) in its best form passes into problem solving (on the mental level) and interactive learning[8], based on the active exchange of the pedagogic competencies between the students themselves, or the students and the teacher. The starting point in cooperative learning is learning through interaction, an asymmetric one, with the teacher and the student as partners. The less competent partner (the child - with fewer specific and general knowledge and experience) enters this interaction with the database of previous knowledge and skills, he/she actively invests, he/she is an active constructor of his/her knowledge. The teacher is not constructing a building in the child's head alone, but they are doing it together through interaction, so the learning/teaching is the process of co-construction of knowledge.

When peer interactions are being considered, then we have a migration of knowledge, a cognitive conflict, cooperation, exchange, and acquisition of the common discourse. Apart from the knowledge, cognitive and metacognitive strategies of learning, through this kind of work, the important "socio-intellectual" skills are being acquired: ability to formulate personal attitude, so the others can understand it; to argument one's own position; to pose a question; to recognize vagueness, inconsistency in communication; to carefully listen and hear the other person; to check the understanding of the other person (e.g. by repeating the main ideas, or rephrasing of what's been said); to get the feedback information; to have a dialogue; to check whether the others have understood properly; not to attack the person, but the position; to show the openness of the mind and sensitivity for the other, different, new, sensitivity of different intellectual and social perspectives; not to change the opinion because of the majority pressure (the majority rule is void), but only under the pressure of logical arguments; to show the interest for the speaker and the respect for his/her position regardless of whether we agree or not; to reach one common solution from several options; to create a joint product, group and not individual; to skillfully present the solution to the oth-

[8] As soon as the teacher makes an attempt to check whether the lectured material has reached the students, did they understand it, what sort of problems do they have with understanding, he/she is interacting with them.

ers; to experience the common problem as a personal one; to divide roles for working in a small group; to exchange roles; to use "the other" as an educational resource and external help in the work; to work for the general welfare; to feel personally responsible for achieving group goals; to develop the feeling of belonging, acceptance, support, care, trust and mutual connection, "social sensibility" what the others are expecting from you and skills and knowledge needed for fulfilling that expectation; to fulfill the obligations and responsibilities toward the associates; to communicate efficiently, and manage conflicts constructively, etc.

Children are not born with the instinctive knowledge of efficient communication with others. Skills of interpersonal communication, work with others, do not magically appear when needed. The students *must be taught* these skills, and be motivated to apply them. These skills must be learned, they are of vital importance and belong to the group of survival skills. One of the first experiences of teachers trying to construct an interactive instructional situation is that the *children do not know how to work with others*. Training children in this important skill is not a specific goal of any academic subject, but their distinct duty, especially when the method of work is similar to the nature of academic subject, as in social sciences.

There are several forms of interactive (cooperative) learning. The common thing to all of them is that by the very organization of the schoolwork, the active role of students and teachers is assured. These forms of schoolwork, apart from educational goals, enable accomplishing of the following goals: formation of social abilities, the abilities of communication and dialogue. Here, we will describe four models of cooperative learning:

E2 a. Cooperative learning teacher - student

E2 b. Cooperative learning in groups of students

E2 c. Teamwork

E2 d. Modeling

Here are several important reasons for using some of the interactive models of work in the instructional situations:

- increasing the motivation for work and learning;
- engage the students to actively participate in the class work;
- aid and stimulate the development of the higher mental functions;
- develop and practice strategies and techniques of intellectual work on interesting and meaningful tasks;
- revive, and clarify the abstract concepts (this is especially important when introducing concepts which are very abstract and difficult for understanding, because of children's intellectual (im)maturity, as well as the lacking of real life experience);
- encourage the intra-group, as well as inter-group cooperation and communication;
- develop abilities of coordinating actions while working on a joint problem;
- develop the feeling of belonging, acceptance, trust between the people, mutual connection, the feeling of obligation and responsibility toward the associates;
- develop the ability of efficient communication and constructive management of conflict situations;
- enable students in decision making;
- enable students in having an argumented dialogue;
- enable students for recognition and understanding of different angles of looking at a problem (several perspectives);
- enable students for recognizing, formulating and solving problems;
- encourage the connection and application of the previous (school and out-of-school) knowledge.

We do not argue for the application of the interactive models of work in instruction, so that it can become more colorful, fun, pleasant (even though those are important aspects of good instruction, and very serious things can be done in pleasant, fun and

interesting context). The goal of application of these methods is for children to understand and acquire representative and important educational material as much as possible, while forming a liking for intellectual work, understanding of its nature, developing the scholarly yearning and interest for the surrounding world.

E2a) Cooperative learning teacher-student

This form of learning starts with the basic premise that students have significant previous knowledge and skills in the domain in which the new knowledge is introduced. With this assumption, learning is no longer a process of transmission from the one who knows (the teacher) to the one who doesn't know (the student). It is mostly a good interaction between the teacher and the student. That interaction is typically asymmetrical, because the teacher is a person with greater life experience, with significantly greater knowledge of the academic subject matter and cognitively mature person. But, the student also is an active partner in building the knowledge; he/she has general life experiences, knowledge and the familiarity with the learned matter.

In situation, where, the teaching process is a form of pedagogic interaction, roles of teachers as partners stand out: the role of the one who is thinking about the motivation of the students (not just about the academic material that has to be learned), the role of the partner in pedagogic interaction, regulator of the relations in social group, evaluator and affective partner (see *"Inventory of Teacher Roles in Instructional Process"*).

Basically, here we also have two general forms of interaction. On one side, we have a conflict between partners. In this case, there are pedagogically very constructive **cognitive conflicts**. The very asymmetry of pedagogic interaction implies that it will occur between the teacher, who is intellectually mature and knows more, and the student, who is intellectually immature and knows less. Differences and misunderstandings about all academic subject matters that are going to be learned will be diminished. And these misunderstandings of cognitive nature are a prolific base for pedagogic guidance in true acceptance of new knowledge. By facing the facts, data, ideas, theories, etc., that are not in concert with the student's previous knowledge and understanding of the phenomena discussed in instruction, the teacher creates a conflict in the student's knowledge. That conflict is good motivation and the best foundation for understanding the novelty. The knowledge accepted in this way has characteristics of a personal discovery or personal realization by increasing the level of understanding and duration of the learned material.

Apart from the conflict, in pedagogic communication, **cooperation** between the teacher and the students plays a constructive part. This cooperation is usually seen in a form of mutual construction, mutual building of the new knowledge in the way of student and teacher complementary activities.

Activities of the teacher. In the real life classroom, the collaboration functions if the teacher resumes the following parts: anticipating the entirety of instructional situation in introduction of a new lesson, preparation of didactic means, planning the lesson, making problem situations for students (in a form of problem question, predicting the new facts, reading a text where the new idea is stated, experiment etc.), organizing the groups of students.

Activities of the students are the following: mobilizing their existing knowledge and experiences, solving predicted problem situations, performing practical and intellectual work necessary in that problem situation. Complementary roles function when the teacher is playing the part of "construction scaffolding", which is a support until the student is able to do the things learned (e.g., giving the definitions of the expressions, performing experiments, writing essays, classification etc.).

It is obvious from this description that it is not necessary nor possible to organize the complete teaching in every subject and in every lesson like a pure cooperative learning teacher - student. The minimum level of this form of learning is that the teacher, during the typical lecturing, follows if students understand his/her lecture. The maximum is - the real mutual construction of the new knowledge in a form of problem-based learning (see this form of learning in chapters C1 and the roles of the teachers and the students in these forms of learning).

E2b) Cooperative learning in the groups of students

Differences in the level of knowledge and the intellectual development of students in the same class, teacher usually notices as serious obstruction in work. In any case, the differentiation on the basis of students' age is a practical attempt of matching the students, who learn the same curricula. But even in those homogeneous groups there are differences. And these differences become difficulties if frontal teaching is organized, in such a way that heterogeneous group of students has to accept the same program, presented in the same way to the whole group, and to acquire it at the same pace. But with different organization of the class (division into work groups, etc.) and with different methods of teaching/learning (problem solving, cooperative learning etc.), that relative difficulty can be turned into a relative advantage.

Here are some situations for practically achieving these goals: the teacher engages mature students as his/her assistants in different ways - by making the conditions for confronting knowledge and experiences of the mature and less mature students - forms of cognitive and social-cognitive conflict are established as pedagogically very productive situation. Even when the students are the same age, but with different knowledge and life experiences (when, e.g., one child knows more about the plants from the books and the other from growing them), there is conflicting and complementary knowledge as a condition for developing the knowledge of the whole group. Students are assigned different parts in the process of learning (some are learning one aspect, the others - another aspect of the same phenomenon), and after that the broad picture is mutually made; the competition among the groups is induced etc.. Following components make a healthy basis for cooperative learning in the group of students:

a) differences in the level of development and knowledge of the students enables exchange among them - everyone understands some aspects of the phenomenon that is being learned, in his/her own way which emphasizes them;
b) these differences lead to the social-cognitive conflict, i.e. the conflict among the ideas whose bearers are different personalities, so this is not just misunderstanding among the facts and ideas, but also a social misunderstanding, this social-cognitive conflict has its advantages in relation to the already mentioned conflict among the teacher and the student where the authority of the teacher can be a disturbance for free thinking;
c) this creates the maximum motivation for taking part in the process of learning ;
d) differences in points of view show us, quite obviously, complexity and multidimensionality of the phenomenon;
e) conflict of the ideas and personalities enables practicing of dialogues, exchange, debate, and in that way facilitates forming of intellectual and communication abilities.

E2c) Teamwork

With the cooperative methods of learning, whether we are talking about E2a model, teacher - student, or learning in the groups of students, whenever we have a division of roles within the group, we talk about the **teamwork**.

Characteristic of the teamwork is the division of roles (sport teams are the pure forms of such organization). According to this form of learning, the teaching is mostly problem solving. To solve a problem, the student's work group assigns the parts to its members. This implies that every student solves only one part of the assignment (and that is how he/she learns it). Resulting in a risk of specialization of the student in only one aspect of the curriculum. That is why, when curriculum is planned teamwork can only be organized as a phase of the work. When in the regular curriculum, we arrive at the material mandatory for all students, then the rotation of roles should be provided, so it is possible for all students to practice all the roles. The teacher takes a role of an organizer, a discrete facilitator of the process of work, a partner who as a team member directly participates in the problem solving.

E2d) Modeling

For this kind of learning several different terms are used: imitation, learning through observation, observational learning, learning according to the model (modeling), learning through identification. These different terms describe a unique method of learning: the learning takes place by observing something new (some way of behavior) with others, so under certain conditions it could be repeated and accepted, so we arrive at new learning.

Yet there are significant differences in the nature of the process, of the above given terms. When we talk about **imitation** as a form of learning, we talk of individual acts of behavior (certain movement, a certain simple action, way of speech, a certain expression or phrase, certain gestures etc.). In the classroom it is mostly learning of motor actions. For example, some already observed actions are simply repeated like handling the school equipment, writing letters and figures etc., or some simpler procedure, like performing laboratory experiment or drawing of geographic maps, etc.

By the term **identification** we generally describe more complex psychological processes of accepting some general forms of behavior or personality traits. The processes of identification assume a strong affective engagement (often of unconscious nature). In the school practice, the best illustration is the case when students get to like a certain teacher, and as a result they can acquire a liking for the subject taught by that teacher and to accept some specific forms of behavior that are characteristic for that subject.

The terms learning through observation, observational learning and **modeling** can relate to the acceptance of specific, particular, but also some general forms of behavior. In the classroom, some general forms of behavior can be acquired, i.e. precision and clarity of thinking recognized in the math teacher or the appreciation of literature, because the literature teacher loves it, or the tendency to create an original artistic work, inspired by the creativity which the art teacher shows daily. But, learning according to the model can consist of accepting specific models of behavior, which can be seen only in certain subjects. In this way one can learn correct body posture while playing the piano, the specific way athletes walk, certain movement in football, or the way one handles tubes in a laboratory, or the process of analyzing the characters in literature, or the way to make an interview during language lessons.

In school (and in general), through modeling, the following components of behavior are usually accepted: motor (practical) actions or procedures specific for certain school subjects, some general intellectual skills (e.g., the way of working on a text which is studied), some forms of social behavior (from the rules of proper behavior to the more complex social behavior), attitudes and beliefs, value system, and personality traits.

Learning according to the model is (if we leave out the simplest forms of genuine imitating behavior) the true form of interactive learning because the role of student is very active according to the modeling. The student selects the model of behavior that he/she will acquire. Learning according to the model occurs only if there is a strong motivation on the part of the student (e.g., in the form of strong emotional identification), and if student is capable of understanding the model of behavior which is being learned etc.

From the research on modeling that has been done up till now, we can come to a conclusion that, this kind of learning will be possible only if many conditions are met. Therefore, it is not enough just to have the model of desired behavior (it is an illusion if the teacher expects that the mere showing of a certain model of behavior is enough for the learning to occur). Research has shown that, there is greater possibility (but not a guarantee) that the model of behavior will be accepted if the following conditions are met:

a) a greater frequency of the model, which is a dominant model of behavior, will be accepted sooner than the rare and the less frequent one;

b) the strong cultural roots of the model, in other words, those models that are harmonious with the culture as a whole, will be accepted sooner than the ones that stand out and appear as a strange body in an environment;

c) social recognition and the rewarding of the desired model of behavior;

d) the evaluation on the part of the student, that he/she will have some kind of reward (prize, social acceptance) if he/she accepts the given model of behavior;

e) motivation of student to accept the given model;

f) social reputation (power, prestige) of the one who is showing a certain model of behavior, the behavior of one who is powerful respected and important in a certain environment will be accepted sooner than the behavior of the one who is a person on the margins of the social life;

g) the clarity of the shown model of behavior, i.e. if someone does not understand the meaning of a certain form of behavior it will be very difficult to come to learning according to the model;

h) the familiarity of the student with the model of behavior - according to the sex, age, social status, the possibility of learning according to the model will be greater if there isn't a generation gap.

So learning according to the model is the true form of interactive learning/teaching. There is an intensive interaction between the given models of behavior and the one who is learning. If all the above given factors work - than the probability of learning according to a model is high. In a case, when larger number of the factors do not work, or if some of those factors work in the opposite direction, then those models do not stand a big chance of acceptance (e.g., in school, very often there are models which favor desirable value system, but the students know from life that that kind of behavior in society is not rewarded and "worthwhile").

In schools there are several forms of learning according to the model. Basic models are the following:

a) models of behavior introduced in the curriculum (characters from literary work, historical characters, scientists and explorers etc.);
b) teachers as models, either models of behavior specific for certain schooldisciplines, or as personalities- models of the positive value system, fairness, moral strength etc., or the negative versions of the same models;
c) student models, favored and pointed out by schools and teachers.

Certainly, models of behavior encountered outside of school influence the students as well: in public life, in everyday life situations, in the surroundings where they live, in the media. In order to make this models efficient (both in and outside of school), previously given rules must be applied. The real problem appears due to the conflict of different models. The most frequent manifestations of this conflict are the following:

a) conflict between a model presented by the school (very often idealized positive models) and models from real life;
b) conflict between nominal models and the real models of behavior (e.g. teachers who praise individuality in child's behavior, but really favor obedient children)
c) conflict between models of behavior specific for different generations (e.g., between the models favored by the teachers and the models that are accepted more by peers).

The conflict between different models defines the complex dynamics of modeling: it can produce the confusion in the adoption of the model, it leads to strong clashes of different models of behavior, it leads to the refusal of the models of behavior that the school wishes to pass over to the students etc. It is important that the conflict of different models is not ignored, but seen as a pedagogically most productive mechanism. Only if the student preference of the certain models of behavior is taken into account, and those preferred models of behavior are openly confronted with the ones that the school wants to present, it will be secured that the process will be instructive, and the things offered by school will reach the students. If that is not

accomplished, the students will, maybe, because of marks and possible punishment, accept the offered models for a short time, but outside of school, they will stick to their usual forms of behavior.

From this research, the roles and activities of teachers and students in this method of learning have been formulated.

Activities of the teacher are to develop a rich, positive offer of behavior models (either the ones in curriculum, or the models of their own behavior), to show as clearly as possible that these models are both the very specific, as well as general. This will enable the students to see and understand them more clearly, to analyze and explain these models of behavior, to know the advantages of their acceptance, to encourage them to show competitive models of behavior (e.g., those specific for a generation in question) and to make them comparatively analyze models offered by the school and models they prefer. This will provide support and constant rewarding of models which acceptance teachers consider pedagogically desirable.

Activities of the students are of more spontaneous nature. These are the processes of understanding the models of behavior, the processes of identification, the processes of active choice from the given models, the processes of active testing of behavior seen from the models.

The problems of evaluating the achievements of the students in this form of learning are specific. As a rule, general effects of learning according to the model haven't been registered nor evaluated by the school. This primarily, has to do with general and complete forms of behavior, such as the value systems, attitudes and beliefs, general forms of behavior specific for certain school disciplines. General forms of behavior are sometimes included in the mark for good behavior (as a rule when they assume negative forms, like aggression), or they are awarded at competitions (sport, or in different academic subjects), in the form of a reward in out-of-school activities, clubs etc. Specific forms of behavior (some skills, knowledge of procedure and action) are included in the marks for different academic subjects.

F. Methods of learning according to the degree and kind of teaching aids used

Basically this classification can be done in a similar way to the previous one. In fact it is possible to divide the methods of teaching/learning into two big groups. On one side, there are the methods of teaching/learning (unfortunately, very frequent in our present school) in which practically no didactic tools are used. We can say that this is one of the rare forms of human activity in the modern world, which often does not use any kind of tools, equipment, instruments. In that first category of teaching/learning are those forms of work in which everything is based on the spoken word and possibly, on the blackboard and chalk. It is clear, that possibilities of activating the students in that form of work are limited. When you bear in mind that these methods of teaching/learning are most frequently receptive (see part C) and transmissive (see part E), then it is clear that the expected result of that work, is learning without the activity of the students, and rote learning.

On the other hand, the contemporary school, in its most modern sense, has extensive equipment used in teaching. That is above all, laboratory equipment, media-clubs and computer learning.

But on the whole in this Manual the school equipment is not a problem in itself. The real question is what forms of activating the students can we achieve without any equipment (see parts A2 and C1), i.e. what forms of activating are possible only with the help of suitable equipment, as is the case in many forms of learning by discovery during laboratory experiments. Also, from the standpoint of student activation, the key question is **who uses the equipment**: the student or the teacher. If using the equipment is reduced to the mere demonstration performed by the teacher, then we talk about receptive forms of learning by using obvious resources, and not the methods of learning/teaching which put students in the position of actively work-

ing on a problem (varied in the degree of difficulty, from nearly mechanical tasks, to solving problems of cooperative learning).

Based on the use of aids, this mounting list is possible:

- verbal lectures without any aids;
- the use of the board and the chalk only;
- the use of textbooks and other written sources of information;
- the use of audio-visual illustrations;
- the use of audio-visual equipment (diafilm, educational film, video disc, computer manual);
- learning with the help of computers as a means of text preparation, for performing different operations, for using educational programs - educational software for programming, for creation of educational software, as a database.

Certainly, that all these combinations of tools exist in the school practice. Here due to their practical importance, four methods of teaching will be separated.

F1. Learning in lab and other specialized classrooms

These are (at least theoretically) well-known things. So, we will be satisfied if we show the importance of this teaching for the learning of the whole activities, and learning by discovery (see parts B3 and C2).

F2. Library assisted learning

For all forms of work which should encourage individual intellectual student activity, it is necessary to have a well equipped media club, which includes a library (not only with obligatory textbooks and literature but with dictionaries, encyclopedias, manuals, editions from the popular and interesting science, rich collection of literature etc.), but also computers with the additional equipment, audio and video cassettes, educational films, CDs, diskettes, didactic materials, tools, didactic toys etc.

This center of information enables easier application of teaching methods, like verbal meaningful learning, practical meaningful learning, learning of the complete activities, problem solving, learning by discovery (see parts A, B1, B2, B3, C1 and C2).

The important practical question is to what extent can these forms of learning be achieved without this kind of school media room.

F3. Methods of teaching using the local educational resources

Very often our schools are closed within the school building and they rarely use other local potentials (resources), i.e. the things that exist near by, which can be used in an adequate way for encouraging activities characteristic of certain forms of learning. Frequently, these local potentials can compensate the non-existence of extensive school media-room.

In the application of all the forms of learning described up till now, the school and each teacher should think over which of the following potentials could be used:

- natural surroundings (ground characteristics, sea, rivers, lakes, fauna);
- cultural potentials (library-media room in the town, museum, theater, galleries, cinemas etc.);
- historical places and monuments;
- sport halls and societies;
- companies and other organizations and institutions;
- institutions for scientific research;
- different professionals (explorers, artists, inventors, various profiles of people, parents etc.).

F4. Computer assisted learning

Our schools are very poor as far as computer equipment is concerned. That is why this form of teaching/learning is rather rare. In modern schools and developed countries this form of learning has developed into a frequent form of schoolwork - CAL (Computer Assisted Learning).

That form of teaching/learning primarily enables practical learning of computer use as an instrument that is used in almost all forms of work outside of school. Apart from learning the technical part of the computer use, the students in this form of learning have a chance for various activities: creating individual and group texts (all the way to printing some kind of their own books), the use of the rich computer's database for any kind of requirement in the school work (including "surfing" on the Internet), the use of the educational software (programs) in all the school subjects, the use of the multimedia sources of information from video-discs and from "electronic books", storing of their own database (the storing and the use of different documents and data), performing complex statistical analysis, correspondence via the e-mail, simple programming, etc.

> ...I HAVE SIX DEVOTED RECRUITS WHO HAVE TAUGHT ME EVERYTHING I KNOW. THEIR NAMES ARE: WHAT, WHY, WHEN, HOW, WHERE AND WHO.
>
> Rudyard Kipling

CHILDREN PARTICIPATION

The term "participation" has intentionally been used to describe the subject matter of this section, a term unfortunately, very rare when talking about school. The purpose was to emphasize that we will be discussing a very important phenomenon, in fact something that is of the greatest importance in the story about the active school.

The term "participation" is used to designate the involvement of a social group in decision-making and activities relating to problems that are of vital importance for that group. In our case, in matters of learning at school, participation is obviously of vital importance for the children/students. This raises the question of whether it is possible and necessary to have student participation, i.e. the involvement of students in decision-making on matters of learning at school and in activities of learning at school, and above all why is such student participation necessary.

Taken in more general terms, the problem of participation in all activities undertaken together by adults and children, so that it is worthwhile analyzing the problem of child participation in different settings - family, school, and community and in public life in general.

Different communities resolve the general problem of the relationship between the adults and the children in different ways. In some cultures the children are enabled at an early age to participate in the life of a social group, in decision-making, in activities concerning the children themselves, and in activities of the adults. On the other hand, modern developed societies marginalize the children up to quite an age, exclude them from the life and activities of the adults, isolate the children and the young in a kind of age-group ghettos.

The consequences of this are different. Excluded from the world of the adults, the children and the young are deprived the possibilities of social learning. This age segregation (isolation) in the formative years can probably explain many problems of poor social adaptation and social pathology among the young (even children!).

Another serious consequence of the restricted participation of the children and the young in the life and activities of a social group is that a developing human being is deprived truly meaningful activities. Actually, the children and young people are in this way forced into pseudo-activities or an activity vacuum, i.e., a living vacuum.

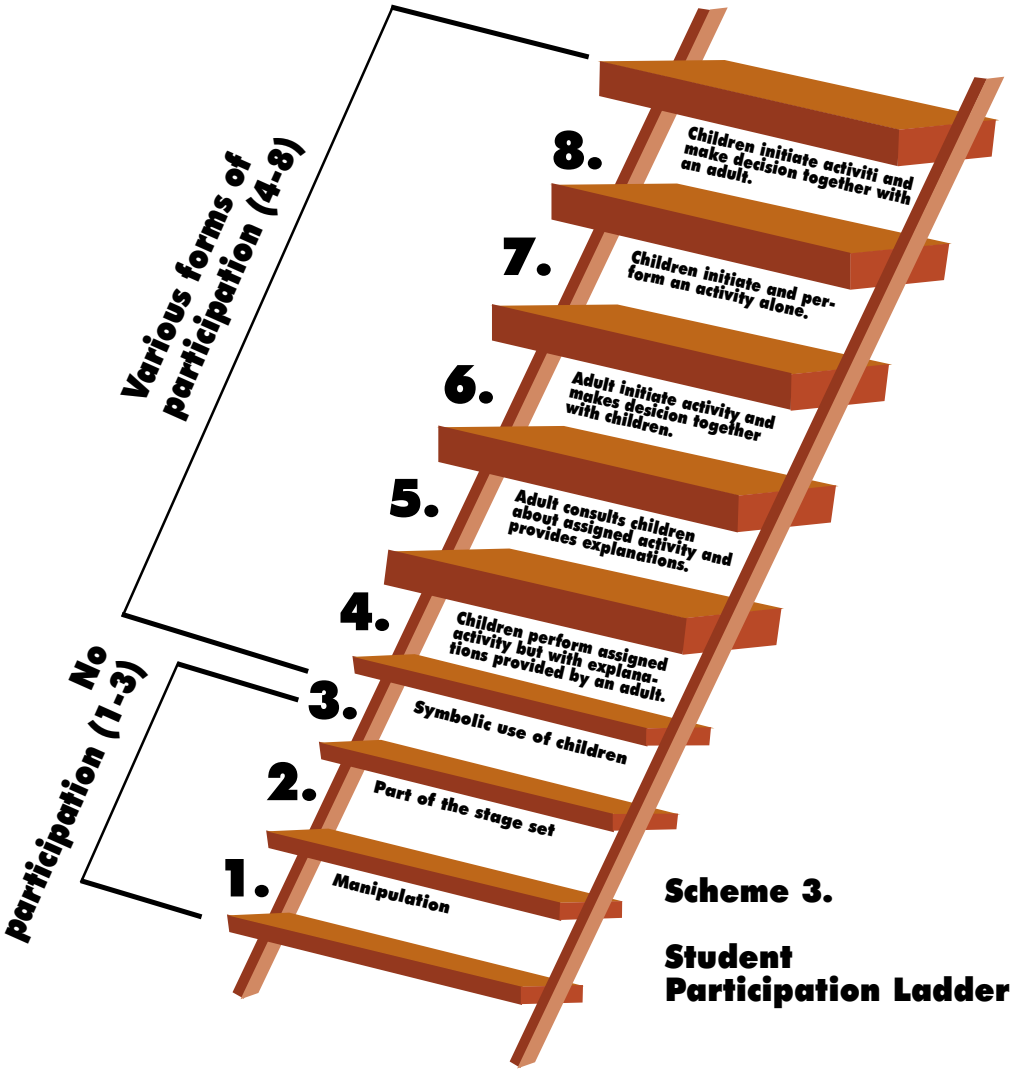
What is especially missing in the life of the children and the young in modern societies are meaningful shared activities of the children and the adults, in which the children genuinely participate.

We will use the "participation ladder," shown in Scheme 3, to describe the problem of student participation.

The diagram clearly shows an actual scale of possibilities for participation in joint affairs of the children and the adults. First we have forms of non-participation, the absence of real child participation.

Manipulation is a very frequent form of illusory child participation. Manipulation is what happens in all the cases when children appear together with adults in joint manifestations and activities but have not been told what they are participating in, why, what effects will those activities have in general and so that children can't understand themselves (or the children are unable to understand it). In other words, adults abuse children for some of their own goals (for instance, they turn them against some other adults; use them for commercial or political ends; draw them into troublesome preparations for a show which is meaningless for children but helps adults achieve their goal; engage them in school competitions which bring more benefit to the school and the school administration, while providing little satisfaction or developmentally stimulating activities for the children, etc.)

Part of a stage set is also what children are often used for. In this form of engagement, children do not decide themselves about their participation, they do not understand the meaning of what they are participating in (nobody tries to explain it, anyway), and their engagement means nothing to them. But, children appear in some brief roles, usually prettily dressed, they say or do something (and that, too, has been forced on them and has been staged by adults), nice photos are taken, the children are then automatically whisked



(Hart, R.A. 1992: Children Participation, UNICEF, Florence)

away, just as they were brought in, and adults go on with their planned activities. We have a decorative use of children in teaching when some chosen students (honor students) recite a just learned lesson, or when they ritually answer a reproductive question.

Symbolic use of children is somewhat less manipulative and decorous. Most often it consists of the participation of children in adult activities relating to children or which can have consequences for children. In this case, too, children are not told about what they are participating in, they do not understand well the meaning of what is going on, and their participation, itself, does not have any particular meaning for them. However, the presence of children (more their presence than participation) serves as a reminder to adults to think of the children. The children who appear in this kind of activities symbolize, but do not represent in a true way, the children for whom the adults' activity is important. For example, when a child is invited to a meeting at which adults are to take decisions of importance for the future of the children, and is expected to say only one sentence (which the child did not have the time to formulate, just as it did not have the time to consult the children it is representing). The child is there only to remind the adults that children, living human beings, whose fate will be affected, underlie the administrative, school and other decisions.

As can be seen from the scheme, there are more forms and levels of genuine child participation. Let us repeat, it is always a question of children participation in the matters important to children. Several principal criteria are used for deciding if children truly participate:

a) how well were children informed (can children understand the nature of what they are participating in; was the meaning of the activities in which they are to participate explained to them clearly enough beforehand and was it checked later to see whether the children had understood it well);
b) do children participate in decision-making in initiating an activity and their participation in that activity;
c) are children able to decide of their own free will whether they want to participate in certain activities;
d) are the children kept informed about the course and outcome of the activity and its consequences for them;
e) is there a possibility for the children, themselves, to initiate an activity;
f) is there a possibility for the children to be in charge of the activity (or part of the activity).

The combinations of the listed criteria give different forms and different levels of child participation. It is important to set out that each of these forms and levels has its justification and educational and developmental function in school.

It is obvious that the first degree of genuine participation are the forms of organized activities in which children have no initiative, nor do they participate in decision-making (category 4. on the diagram), but are certainly well informed. The logic behind this form of engagement goes something like this: "We must do so and so....The reasons why we must do it are the following... Is that clear?...Let's do it!" This is often a situation at school, but it is simply unbelievable how rarely the children are given an explanation of the assigned work and why it must be done.

The next level of children's engagement is when the adults try hard to hear (really hear!) what the children have to say about the matter and then explain to them in detail the purpose of the activity in which they will participate (category 5. in the scheme 3).

Categories 6., 7. and 8. introduce the most important criteria for evaluating participation - who initiates an activity, who makes the decision that the activity be undertaken, who supervises the activity.

Evidently the genuine forms of participation are those which consist of roles divided between the children and the adults. That is a genuine participation (category 7. is not a good example of it, because it is about exclusively children's activity). Essential problems of living together in a social group are reflected in a joint activity of the adults and the children: communication between individuals who are different, confrontation of different views, resolution of mutual conflicts, coordination of different views, and, what is the most important, mutual actions of individuals and executing implementation of the shared activities. In the human affairs, it is difficult to find more complex problems than those listed.

What has been said so far pertains to the participation of the children and the young in the life and activities of a social group. We are here especially interested in children's participation in activities at school, above all in teaching/learning activities. Is children's participation needed? Is it possible? What are its justification and purpose?

The answers to these complex and serious questions must take into consideration the overall social-cultural context. What we are saying is that when we resolve these problems, we must not forget that the general context is very negative. The unfavorable situation is effected by three major factors combined together.

Firstly, the general traditional patterns of behavior towards the children and the young in our culture. To put it simply, in our culture, the children and the young are not expected to display initiative, they are rarely included in a decision-making process in a community, and their obedience and passiveness are particularly appreciated. It appears that these patterns stubbornly persist in the primary socialization of children in our families (with few rare exceptions in liberal middle-class urban families).

Another major factor is the overall social climate, which does not stimulate and does not seek genuine participation of either the adults or the children and the young.

The third major factor is a general ideology that has predominated in our education in the past and does so today. According to the doctrine everything but the true and active participation in the life of the school and in teaching is expected of a student.

What can one say about the combined and cumulative impact of all three factors!

The methods of teaching that have been in existence in our school for a long time are another story. The education process and learning at school are an important form of human communication and interaction. Pedagogic interaction is a special form of interaction, characterized by a series of specific features, including the fact that it ought to be a joint activity of an adult (teacher) and the children (students) in specific and different roles.

However, in real life at school, this interaction is broken down into two activities which rarely intersect. Teachers do their share of activities in the form of teaching, and students perform their activity -- learning-- quite separately (frequently only once they get home, meaning not even in the same space).

Therefore, the ideas presented in the Participation Ladder Diagram are a useful instrument for analyzing the participation of students in the teaching/learning process. The primary task of a teacher, especially the one who participates in the Active Learning/Teaching project, is to use that instrument and analyze the actual position and role of students in the teaching/learning activities and to clearly grasp what he/she, as a teacher, is doing in that process.

We will list here some of the incentives for such analyses:

a) All these ideas about the participation of children in the life and activities of a community, don't imply that we are promoting the idea of children being left to themselves (*laissez-faire* idea) or that they be isolated in reservations of their own activities. What is involved is a far more complex task of undertaking shared activities in which adults cannot avoid their own roles.
b) Every teacher should make for himself/herself an exhaustive and frank analysis of the extent to which he/she uses the non-participation forms of child/student engagement (manipulation, part of a stage set, symbolic use). It appears that there are too many pseudo-activities in which children are given predetermined and very strictly defined roles and only then allegedly allowed to be independent. Children, for their part, accept the game, quickly realize what the teachers expect of them and act their role out of interest. Much more would be accomplished in teaching if these games and manipulations with children were to be avoided.
c) The "participation ladder" shows that there are different levels and forms of genuine participation of students in school activities and that each of those levels and forms is precious.
d) Wide possibilities exist for students to achieve participation even in the forms of work in which students really cannot have the initiative and cannot participate in decision-making on what is to be done (to decide on the objectives of education, the curricula and programs, etc.). Still, participation is possible even in such situations, provided the earlier given condition of offering the students necessary information is met (about what is to be done, why it has to be done, what is expected of them, how it will be done, what the final result of work will be, how their work will be assessed, and, feedback information about what has been done, how much did the students accomplish of what was expected of them, etc.).

In other words, this requirement is nothing else but a guarantee of meaningful learning (see *Methods of Learning/Teaching section A2 Meaningful Receptive Learning*). It is only through meaningful learning that student participation is secured and manipulation (which has just been defined as the inclusion of children in activities whose purpose they do not see or understand) excluded.

e) In the teaching process, at least in its most frequent form in our schools today, possibilities are limited for the students to have the initiative or to participate in decision-making on what is to be done. The teachers are in no better position, since school regulations (above all curricula and programs) very strictly specify what is to be done. Elective subjects and extra-curricular activities (clubs, free activities) offer some possibilities for student participation in our schools. In a

really active school, there is far more room for student initiative and decision-making on what is to be done (a wider choice of subjects and program items, a global and not detailed definition of the program, etc.).

Higher levels or forms of participation (levels 6., 7. and 8.in Scheme 3) are possible in decision-making on how something is to be done (what methods are to be employed, how are groups of students to be organized, the place and the means, etc.). The possibilities for expanding the area of genuine student participation should be carefully studied and implemented in practice as much as possible.

f) The capacity of children for participation in the process of learning at school is a long-term process. It is a process of such duration that the entire period of primary education constitutes just one phase. The development of participation abilities, especially those for the higher forms of participation, is founded on the increasing abilities and competence of the children. Although it is to be expected that some forms of participation will take root slowly, teachers must be aware that if student participation is not continuously practiced, it will not develop on its own and students will view learning at school mostly as an alienated activity in which they participate uninterestedly, since it does not have much meaning for them.

In conclusion, let us once again list the main reasons why it is necessary to guarantee a greater participation of students in school. It can rightly be said that it is also possible to acquire some ready-made knowledge even through the non-participatory, transmissive teaching. However, some important objectives, important knowledge, skills and competences are not possible without student participation. The alienated feature of the activity of learning -- the feeling that something that belongs to someone else has been imposed, meaningless for children -- cannot be lessened without student participation and an additional effort on the part of the teacher to restore the feeling of the students that they, themselves, play a role in the matter.

It is not possible to develop many social abilities without various forms and levels of participation. For instance, the ability to communicate with people who are different from you, the ability to present one's own ideas so that they are clear to others, the ability of public presentation, the ability to persuade others, the ability of preventing and resolving mutual conflicts, of expressing one's own interests and needs, of understanding the interests and needs of others and adjusting the two, of adjusting one's intentions and actions to the actions of a social group, all these are abilities which can be acquired through a long-term practice of participation in joint activities. Can anyone say that these forms of learning are less important than memorization a quantity of facts in any subject, no matter how important?

The awareness of one's rights and responsibilities to other individuals and social groups, i.e., the ability to defend one's rights in front of others and the ability to protect the rights of others against one's self is also something that can effectively be accomplished only through participation in joint activities.

As far as the long-term effects of participation are concerned, it is obvious that, without participation, the children and young people cannot be prepared for the roles which is expected of every adult citizen. Since the activity of learning/teaching at school is the predominant activity of the young during the long years of education, it is inconceivable to enable someone for the role of an active and responsible citizen without personal participation in that predominant activity in a person's formative years.

At the individual level, it is of special importance and significance that self-awareness and self-respect can be developed only through active participation and achievements in it.

All the above points to the conclusion that active learning is a synonym for participative learning.

THE MOST COMMON MISSCONCEPTIONS ABOUT ACTIVE LEARNING /TEACHING

1. Active Learning/Teaching is a kind of entertainment, a "game", attractive activity for halt briefly serious hard schoolwork, with the aim to motivate students for work.

The idea of Active Learning/Teaching was not formulated, as an attempt for children to relax, enjoy and rest, from serious intellectual work at school, but primarily for pedagogic reasons - that the things children learn in school, should be learned in qualitatively better way. The knowledge acquired this way should be meaningful, lasting and more useful. The results of all evaluations of the effects of elementary education in Yugoslavia[9], show serious shortcomings: bad quality and low level of acquired knowledge. Due to pedagogic ineffectiveness and the existing unsuccessful model of work in schools, the idea of Active Learning/Teaching was born.

The first aim of the active school (A-schools) is better educational results and the second, not less important, is improving the position of the child in schools. This way the child would have more chances to make decisions, to choose, to freely express itself, to be asked for an opinion, attitude, judgment, to be equal, to be a partner in pedagogic communication, to have its pace of work and mental characteristics respected, to have its out-of-school knowledge and skills respected more, to have its various interests and other kinds of abilities supported apart from a good and quality reproduction of the learned material, which is favored to the maximum by the traditional school (T-school). It is quite clear that the children in the A-school feel better, more pleasant, more pleased, even though they work more and harder. This is the result of the completed activities, which are meaningful, logical, useful and usable for the child, which respect many individual differences and meet their needs, which are primarily intellectual, mentally provocative and attractive. These activities activate different aspects of the child's personality, different school as well as out-of-school knowledge, encourage the production and creativity. The basis of that attractiveness is the fact that in the new A-school the knowledge is connected with the child: its experience (both out-of-school and previous school experience), due to the structure of that knowledge, the child's personality is rediscovered, as well as its motivation, because the child is treated as an active, mostly independent factor in acquiring the new knowledge. Therefore, activities in A-school have to be attractive, but not for the observers, the audience since they are not meant for them, but for the child who takes part in them (the attractiveness shouldn't be confused with the activity)!

[9] See: Havelka et al., "The Effects of the Primary School Education", Institute for Psychology, Belgrade, 1992; "The Elementary Education in the FRY - Analysis and Recommendations", Unicef, 2001

2. With Active Learning/Teaching only some partial goals like the development of communication ability and dialogue can be realized, but the majority of important educational goals cannot be accomplished.

The activity of the student in teaching as seen in this project, is defined by three elements which are closely related: the aim we wish to achieve; the material, curriculum content given to us to realize the planned aims; and the method of work, which we choose depending on the first two elements (if I want to achieve this aim with this curriculum, which way, method shall I use in order to achieve it best). The connection of these three most important elements: the aim, the material and the method of work, gives us the answer to the central questions: what do the children do, that is, whether the planned activities of the students are specific and relevant for the given discipline, subject or not; why do they do that, or what is, really, the result of their activities.

It is clear from the above mentioned, that with the active methods of learning/teaching a wide range of aims can be achieved and that the nature of these active methods does not exclude any definite goal. On the contrary, owing to a wide and rich choice of methods of work, in A-school a greater number of goals are achievable than in the T-

school, where goals connected only to the cognitive field are realized mostly, and even then not all goals, but usually the ones connected with the good reproduction of the learned material.

3. With Active Learning/Teaching it is not possible to realize the planned curriculum, because Active Learning/Teaching is not a universally applicable method of work, but it is a method exclusively appropriate for certain lessons, groups of lessons, or a type of lesson, like the introduction of the new academic material.

The activity is a continuum, and not a discrete dimension, present or not. Range of the activating methods is extremely rich and wide and the active methods are not exclusively applicable only on certain contents and on certain types of lessons (the learning of the novelty, and not on systematization). It is a fact that with the active methods not all academic subjects can be taught, while respecting the principles of economy and the rationality of the teaching process at the same time, but that is not necessary. A-school is aware that a good deal of the curriculum (e.g., in history) is done best by lecturing. However, what A-school insists on, are activating lectures, i.e. A-lectures that would be based on children's previous knowledge and experience. A-lectures are organized in the form of problems, which will include questions and answers, dilemmas, out-of-school knowledge and experience which will with meaningful presentations of the curriculum mentally activate the students, awake them and keep their curiosity and motivation for intellectual work.

It is important to mention that in active teaching/learning we are not bounded by one lesson, but the main question is how to bring closer certain curriculum to the child, and the plan we come up with can be realized over one or more lessons. The main thing is that no one can have a completely new idea for each lesson and that the ideas are not related to the solution for a single lesson, but the discovery of the best way for the chosen material to get to the child of a certain age.

4. Active Learning/Teaching demands the use of technical aids in the teaching process.

Schools should not turn a deaf ear to the changes which occur in the child's surroundings, and continue to " tell its story" no matter what the characteristics of the world in which child lives are. The technical aids are a part of daily life for the majority of children, and that fact should not be overlooked but included in school. How many children in technical training course still make tin cans, and how many of them use these lessons in order to understand how different electrical or electronic devices work and how to handle them? It is good that the school has different kinds of technical aids, which facilitate the transfer of knowledge or its active usage, but that is not *a condicio sine qua non* (condition which we can not do without) of active teaching.

Quite often schools have certain technical equipment, but they do not use it appropriately, so that it stands somewhere locked up in a cupboard or it is used mostly as an illustration during the lecture. It is ideal if the technical equipment can be used as an aide accessible to the students, for the more efficient acquisition of knowledge.

Technical aids are not a condition that makes the A-school possible, in fact A-school skillfully uses all the advantages of media (the ones that it has of course), especially the one dominant at the moment - visual media, for the realization of the educational goals. One thing is certain, the essence of Active Learning/Teaching is in the creative solution to the problems of transmission or knowledge discovery. This can be equally efficient with the help of the "stick and rope", but having a wider choice of tools for the implementation of an idea is, of course, welcome. Therefore, the essence is not in the mere possession of technical aids, the mere possession and their usage, does not guarantee the wished outcome - active learning/teaching.

5. Active Learning/Teaching asks for highly equipped schools.

It is by far the nicest, the most comfortable and the easiest to learn in a comfortable and highly equipped working space, which has all kinds of needed material: pencils, colors, papers, books, work materials, pictures, slides, films, music, tools, lab-equipment, models, technical appliances… But the real meaning of rich and varied equipment is to help, and make the realization of the idea, the design of the lesson easier and of higher quality - so, the equipment is just the tool, which one should use effectively. The equipment has a meaning only if it helps active work on the material (there is no painting with the help of talking but instead one needs colors for that) and taking in and acquiring the knowledge and skills. Now the question is what is the function of highly equipped schools (if not only to contribute to the principle of obviousness in instruction where possible), if the students are only asked to directly reproduce the things lectured or read in the text books.

Here a suggestion might help: if there is something missing from the things we need for the application of active methods, look around, maybe that can be found in the surroundings: in the nature, in the town, in other institutions, in the local community.

6. Active Learning/Teaching can, in fact, be reduced to learning by discovery.

In the psychological and pedagogic literature (even the recent one), we can come across the synonymous use of the expressions Active Learning/Teaching and learning by discovery. Learning by discovery is one of the really activating methods of work, but only one of the methods, and not the only method of the kind. Our concept of Active Learning/Teaching includes various methods of work, according to the type, as well as, according to the level of activation. Even rote learning often asks for a lot of effort and time from the student, is an activity, but above all it is simple and automatic, which except for memorizing does not engage any other psychological function. Its upper most scope, its most developed form is the engagement of mnemonics for an easier and longer lasting memory. It is clear that there is a place for this kind of learning in school and that this is for certain kinds of material the most active method of work (e.g., for learning poems by heart, for proverbs, for sayings, for counting games, for multiplication tables etc.).

On the other end of the continuum are methods of learning such as problem solving, learning by discovery, cooperative learning, divergent creative learning, complex activities, which beside the basic thought processes engage other aspects of the personality.

All methods are more or less activating and none of these methods by itself guarantee active learning/teaching. Every material should be processed using the method that can obtain maximum, while at the same time the principles of economy and rationalism should be respected, in accordance with the aim we want to achieve with that academic material.

7. Active Learning/Teaching is in fact, the mastering of skills i.e. activities that can be noticed on the outside.

Active Learning/Teaching in the classical Deweian sense (John Dewey - a famous American philosopher and pedagogue) really represented the mastering of the skills, *learning by doing*, the insisted student activity was the activity seen on the outside.

Activity, in our concept of active learning/teaching, has a wider and more complex meaning. That is a complex expression which is very difficult to define, and even more difficult to classify. A lot of criteria can be specified, parameters according to which activities can be classified, e.g.: productive - reproductive, meaningful - meaningless, mental - motor, simple - complex, given in advance - self initiated, fixed - chosen, verbal - manipulative etc. Under the expression activity of the student, we primarily think of the mental activity, but also on the wide range of all kinds of activities, which can add to better and higher quality mastering of the knowledge and skills. Such is the ability of leading a conversation, good presentation of one's own idea, solution, the capability of expressing one's own opinion, discussion, asking questions, making decisions, taking over the initiative, better self recognition and a more efficient use of one's own interests and capabilities…

8. Active Learning/Teaching is the application of psychological workshops in school.

Active Learning/Teaching is sometimes considered as a "psychological invention" with the aim of making children feel better and making school more pleasant, to lessen the fear, fright, nervousness, even a number of psychological difficulties of the student, to improve the atmosphere and communication in school. These are important problems and it is useful to work on them, but they are not central to our project of Active Learning/Teaching. The Active Learning/Teaching as portrayed by the name, is directly connected with the teaching process, it is connected with the fundamental schoolwork, teaching and learning (i.e. one and the same activity only seen from the two angles: from the angle of the teacher and of the student). As we have already emphasized one of the main goals of active teaching is the improving of the position of the student in school, but that is the result, consequence of a better planed, more efficient and higher quality pedagogic work in A-school.

9. Active Learning/Teaching is a set of recipes that every teacher can use directly.

The "educational cookery book" does not exist from which you can choose a recipe and apply it directly on a lesson. There are collections of ideas, a number of good solutions for certain types of material and academic subjects, as well as the concepts of other people's lessons. However, the main thing is that the teacher himself/herself, on the basis of the knowledge acquired about what is Active Learning/Teaching, with the suggestions of fellow teachers from his/her own or from other schools, or from the colleagues from the Institute for Psychology, makes a concept, plans his/her lessons in accordance to the principles of Active Learning/Teaching and the characteristics of the population, conditions, environment and workplace, and also according to his/her personal affinities. So, he/she does not use directly a copied recipe but he/she creates his/her own lesson, consulting the ideas and suggestions of others, but in accordance with the things that best suit him/her and the work conditions .

10. Active Learning/Teaching is easy for application.

One of the more serious misconceptions is that the teacher in an active school has easier job than the teacher in a traditional school, which most probably stems from the misconception that Active Learning/Teaching is "a game", fun, the imported fashionable idea from outside. It is neither for the teachers nor for the students easier in A-school, it is harder. How are we then going to motivate both the teachers and the students to do something that is harder?

The easiest thing is to enter a class with the same "rhyme" for twenty years, which would be recited to the students and ask them to repeat it with understanding. Literal application of stereotypical models is a simple and not a demanding activity. A-school asks the teacher to be an initiator, creator, designer of the lesson, "the pathfinders" to the students, and from the students it demands a lot of personal engagement, various activities (except for reproductive), initiative, decision, making critical acceptance of information, connection and transfer of different knowledge and skills.

All these activities, although more complex and more demanding much better meet the human needs and interests, contribute to better self-recognition, and the discovery of one's own potentials and affinities. The knowledge and skills acquired in this way are meaningful, more useful and better connected. Just because of the man's natural need for meaningful work, A-school, with its demands, is more difficult, but at the same time more interesting - a man feels better in it, which is confirmed by the ones "infected" with the A-school ideas.

11. The application of Active Learning/Teaching demands the essential breaking up of the subject-class-lesson structure of schoolwork.

The application of Active Learning/Teaching demands a more flexible organization of schoolwork. That means that sometimes it is essential to introduce a double lesson, three lessons joined together, block lessons, connecting some lessons (history, geography and literature, e.g.) or other similar actions that "stick out" of classical lesson structure. So, it is possible to make a concept of an active school within the existing conditions of work (because a good replacement for subject-class-lesson organization of schoolwork has not been thought of) only with their more flexible application.

12. Active Learning/Teaching is the same as group work.

Cooperative learning as one of the main methods of work in an active school, cannot be reduced to the group work (according to its structure of demands, it surpass it) not to mention the entire active teaching. Here we talk about the different kinds of terminology and priorities at work. The term group work only describes the exterior look of the activity - that students work in smaller groups. The term cooperative learning, besides the fact that it tells us that in this kind of learning in which one cooperates with the others, it shows the kind of activity of the group members - they cooperate, each one with his/her specific part, in order to achieve the wanted goal, and the types of interactions between the members of the group and the groups themselves are also mentioned. Active Learning/Teaching does not have to take place in smaller groups sometimes they can be bigger groups, pair work, individual work or a combination of all these forms of work

13. For Active Learning/Teaching the laissez-faire way of instruction is characteristic, i.e., we have a chaos in the classroom.

Very often lively discussion, loud conversation or movement in the classroom, during implementation of the lessons of active teaching, is confused with chaos and a loss of control in the class. Looking from the outside, the children are really freely moving around in the room, taking what they need, sometimes very loudly talking or arguing, they are laughing - but one must bear in mind two things. First: active teaching learning does not always have to look like that from the outside. It can go on in a different atmosphere (e.g., in complete silence which is a sign of serious thinking activity), and the expectation of a noisy and lively atmosphere in the classroom is a result of an unjustified reduction of Active Learning/Teaching to cooperative learning. Second, even when it seems to the ignorant observer that there is a chaos in the classroom, it is not the question of the activities chosen at random, but it is an appropriate task caused by behavior and activities, which are the function of solving the task and planed in advance. The teacher's role during this kind of lesson is discrete but extremely important. The teacher, like a film director who has done the main part of the work before the lesson, unintrusively watches over the work of the students, controls and directs their activities, serves as a counselor, remainder and an assistant in the realization of the planned tasks.

THE ONLY STUPID QUESTION IS THE ONE NOT ASKED.

Paul MacCready, inventor

SPECIFICS OF THE ACTIVE LEARNING PROJECT

The *Active Learning Project* is one of many attempts to change the school, pedagogic methods in school, the position of children in school, to solve the key problems of educational quality and efficiency (in the school, outside of school, in formal or alternative educational systems). From there stems the need to clarify as much as possible the specifics of this project. The entire *Manual*, as well as many attempts of practical implementation of the project ideas, clearly speak how different it is from the other old or new efforts of educational transformation. Certain sections of this *Manual*, such as "Theoretical afterword", "The Most Common Misconceptions about Active Learning /Teaching", and all ideas for practical realization found in section "Creation of ALT Lessons", directly try to define the specifics of ideas and practice of active learning, on which the authors of this project insist.

However, every idea of the authors, when presented publicly becomes some kind of general benefit, open for interpretation when encountered. In this part, we would like to inspire the readers and users of the *Manual* to start thinking about the specifics of this educational approach. Therefore, the purpose of this part of the text is not to be a substitute for the entire *Manual* (even less of the thriving practice developed within this project), but to explicitly confront all the people familiar with the ideas (especially the ones that have tried to realize them in practice) with the dilemmas which are an integral part of such a dynamical project. In keeping with the spirit of the active school, we will not offer complete and final answers, but inspiring, problem tasks. As you will find out, for these dilemmas and tasks there are no single or definite answers, but there are very precise frameworks which define what ALT certainly isn't, what ALT certainly is, what it can, but doesn't have to be, depending on actual circumstances and situation specifics in which learning takes place, what is being learned who are the ones that learn.

The first problem task can be found in the following table:

Table 2. ALT and various tendencies in education

Possible tendencies in education (concepts of the school)			
1	Curriculum centered school	↔	A
2	Teacher activities centered school	↔	
3	Student centered school	↔	
4	Achievement centered school	↔	
5	Child centered school	↔	
6	Child friendly school	↔	L
7	Interactive teaching/learning	↔	
8	Development of thinking centered school	↔	
9	Critical thinking centered school	↔	
10	Creativity centered school	↔	
11	Child to child school	↔	T
12	Student to teacher school	↔	

Our plan was to motivate every participant in the ALT project to find the answer through his/her own thinking to the question: what are the specifics of the ALT? This could be done through comparison of the previous knowledge about the ALT with each of the 12 statements in Table 2 (It is implied that the school cannot entirely be based on only one conception, except in extreme cases, presented in statements 1 - 12. Actually,

these 12 statements, and the list can be enlarged, make up a list of semantic markers, i.e. units of meaning deliberately singled out, which allow for creation of real school's specific profile).

As incentives for thinking about the specifics of the ALT project, the following problem questions should be used:

1. Which of the 12 mentioned statements (only one) expresses the best the essence of the ALT ideas and practice? In other words, which of the statements could be taken as a synonym for the meaning of the ALT?
2. Could elements of each of the 12 statements be found in the ALT? Which part, which aspect of the ALT demonstrates elements of each of the 12 statements (e.g. where in the ALT could be seen that children learn from children).
3. Chose three of the 12 mentioned statements which, taken together, represent the best the specifics of the ALT.
4. Which of the mentioned statements are the furthest of what the ALT is (or: which statements represent what is opposite of the meaning of the ALT)?
5. Apart from the ALT, which statement, one or all three chosen, describe Yugoslav existing school, familiar to our readers, most precisely?
6. Bear in mind some other innovative project that you are familiar with, or participate in, and please express just one/or three statements that describe the best the specifics of that project? Compare the obtained profile of that project with the ALT profile, which you acquired by answering problem questions 1. and 3.

The authors of this Manual believe that everybody that actively participates in the ALT project by solving the aforementioned problem questions (new questions could arise) will arrive on their own to the answers about the specifics of the ALT.

The twelve statements mentioned in Table 2, can be reduced to a simplified dilemma about the concept of our schools. That kind of simplification is not just one way to think about the school and education, nor is just an intellectual exercise. Very often in theory and practice are defined alternative notions of optimal directions for the reform of our schools (similar dilemmas exist in other countries too).

On one side, we often talk about "the school appropriate for the children", or a child-friendly school, or the school that children like and which represents the friendly environment for the child, or the child-centered school. People familiar with the history of various innovations in education will remember practical experimental attempts for creating schools like "The Summerhill" or Decroly's school, *centers of child's interests*, etc.

On the other hand, one finds supporters of the school as a serious institution, with important social functions, which, therefore must provide for high academic achievements (or at least declare high academic achievement as its goal) without much concern about feelings of children in such school. Many current schools fall into this category (e.g., one major secondary school, many schools for sports' facilitators, ambitious art schools, or specialized schools for gifted children which must, above all, create high level experts). You can also find many ambitious boarding schools (almost military type), which guarantee the parents high achievement for their children, etc.

Based in deliberate intense confrontation of these notions, we will define one more problem task, which will contribute to even more precise definition of the ALT specifics.

The basic problem task to be solved by using graph 2 as an aid is - where should the ALT project be located on this two-dimensional graph, and why there precisely? (which components of the ALT project have led you to choose such location?)

But, in order to understand the specifics of the ALT project, it is necessary to compare different notions on the school, as well as different innovative projects happening in the certain environment. With that aim in mind, the readers and users of this book should attempt to solve the following problem tasks:

Picture 2: Two dimensions of the school

- Where on this two-dimensional graph can you locate our existing school as known to our readers/users (i.e. determine the position on the ordinate and abscissa), why there, which facts about the school influenced your decision?
- Finding the extremes: based on your own awareness, locate on the graph, a conception, or an actual school which deserves high, or the highest ranking on the dimension "child-friendly school", but very low on dimension "educational efficiency" - and why?
- For each innovative project that you know, or participate in, locate the place on the graph, and justify your solution.
- For each proposal for the new project, locate the place on the graph, and decide whether this place is in accordance with the declared specifics of the proposal.
- For each proposal for educational reform (general or partial) locate the place on the graph, justify your answer, and discuss whether what's been proposed is in accordance with the place on the graph.
- Where would you personally like to see the place of our school in the next 10 years?

These are the preparatory tasks for thinking about the problem of specifics of the ALT project, in connection with the relevant importance of the two dimensions in comprehension of the school. Hence the primary task:

- Where should the ALT be located on this two-dimensional graph, why there (according to which specifics and components of this project). Considering this significant problem, the following sub questions could help.
- Where should the ALT be located if we have in mind the basic specifics and long-term ambitions of the ALT?
- Where should the ALT be located if we bear in mind the current possibilities in our schools (or the school where reader/user works)?
- Considering the actual conditions in our schools (the position of children, actual student achievement) where should the ALT be located in order to improve precisely the fundamental problem of our school (or a particular school in which the reader works) - should the advantage be given to those aspects of the ALT which

might contribute to creating a child-centered school or a school which is educationally more efficient?

- Where should the ALT be located on this graph, if we have in mind certain levels of education (first grade in primary school, class teaching in primary school, the higher grades in primary schools, or a secondary school of a specific type), or if we have in mind particular academic subjects (math, arts, biology, chemistry, literature)?

All these problem questions have, as already mentioned, one goal - to those familiar with the ALT, and especially those trying to practically implement the ideas from this project, lead to serious and independent thinking about the this project's essence, in order to change practices in our education. That kind of thinking is the best way for auto reflection on one's own practical work, in order to become fully aware of their importance.

If the reader has truly been solving some of the given problem tasks, then some of the ways of defining the distinctiveness of the ALT could be the following:

- If the place of the existing school (or any specific school) is located on the graph, as well as the place of the ALT, then it becomes clear which direction should changes initiated by the ALT occur (how many units on the abscissa, how many units on the ordinate).
- If you have located a place of some new project (that you are familiar with, or that you participate in) on the graph, and the place of the ALT, then by comparing the different positions, very clearly you can detect the specifics of the ALT
- If the places for the lower and higher primary school grades (or some other levels of education) have been located on the graph, then conclusions could be clearly formulated as to direction of emphasis in the school progress (e.g. first of all, form positive attitudes towards the school and learning, and later intensify the standards of educational efficiency).
- If you work in some specific conditions (with children from the socio-culturally deprived regions, children - refugees, children exposed to stress and trauma, children whose mother tongue is not the language of instruction, etc.), then the dimensions "the school appropriate for the child" or "a child friendly school" could be favorized. And vice versa, if you are working with children in very favorable conditions, with gifted children who find pleasure in learning, when we talk about some forms of informal learning (summer schools, field trips, science centers and parks, or forms of educational work which children voluntarily have chosen, and in which they gladly participate, etc.) where you have good work atmosphere anyway, then you could strongly insist on achieving the greater learning effects.

The last impulse for the thinking about the specifics of the ALT school, is to state where on the graph the authors of this project had located the ALT. The views of the authors can be summarized in the following fashion:

In every educational system, in every school, with every teacher there is a dilemma as to which of the two dimensions to favor. It is an eternal dilemma in education and rearing of children, and it could be found in Poster 2: "The Basic School Formula" (appendix 1). The focus of the dilemma is to what degree is the child in a school just a child, i.e. the complete personality, and to what degree has the child been reduced to a student.

There is not a universal answer to this problem. The answer depends on the actual circumstances (age of children, the nature of the academic subject, the structure of children in a class, methods of teaching/learning, their living conditions, the conception of school and social requirements that must be met by he/she school, etc.).

For the ALT on the whole, but also for many other conceptions of the school, the ideal solution would be to continue as far as possible on the diagonal, i.e., to achieve a school appropriate for the child / the school as a friendly environment, and at the same time to achieve the maximized educational effects (students' achievement, changes in behavior or socialization). But, that is simply not possible, because the two dimensions are not easy to reconcile, especially in regular public school. Advancing on the "diagonal" is just a general very desirable aim that could be accomplished only sometimes, and in certain favorable conditions. In majority of situations in the regular school, the two dimensions shown on the graph act as rope of restricted length, so if it is pulled at one end, the other inevitably contracts.

Having in mind the concrete situation in our country, with the school being the way it is, in a situation where the educational level of the population is low, for the regular, massively attended schools - if forced to choose (and they have to) the authors have come to the following decision: a) throughout the ALT project, the high achievements must be guaranteed (on a graph, this would be shown as a very high point on the ordinate, some of its length), and on the abscissa we should try to go as far as possible (at least try to reach the right half of the abscissa). This means that we would leave for other conceptions of school and other projects to "score better" on the dimension "school appropriate for the child", if the price that must be paid for this option is low or lower educational achievement.

For a better understanding of this decision, it is important to know what we consider an educationally effective school. It is a school that guarantees to the vast majority of students the acquisition of the basic knowledge which is long - lasting and useful even outside of school, development of the skills and competencies important for the successful further schooling, professional and personal life, intellectual and personal autonomy, development of social and general knowledge, skills, and competencies (see *"Model for Evaluation within the Framework of ALT"*). The authors believe that this stand is not only their wish and intention, but also that it has been built into the core of this project.

I WOULD RATHER KNOW SOME QUESTIONS THAN ALL THE ANSWERS

James Thurber

A2. TEACHER ROLES

PROBLEM QUESTIONS ON ONE'S OWN TEACHING PRACTICE

This list of questions should make us think over our own teaching practice: The things we wish and things we do not wish to achieve in our teaching? The things we do and things we do not do? To what extent are we aware of the things we do or that we do not do?

- What characteristic, in your opinion, should an ideal child, a child-role model and a child-model have?
- What is an ideal student like, what characteristic should he/she have, the exemplary student, that you would prefer to teach and that would be recognized as a role model?
- If you have personal or family problems do you "leave them outside" entering the classroom?
- Are you more cheerful or gloomy while teaching?
- Have you ever heard your own voice (when you talk, when you lecture) recorded on the tape? Do you know how it sounds? Do you shout in class?
- When you teach do you smile, frown, make faces, look at the ceiling, play with your hair/ or your beard, or gesticulate? Have you ever seen yourself on videotape? What impression do you get while watching yourself?
- Before you start the new academic subject matter do you check the students' previous school and out-of-school knowledge?
- Do you connect your lessons, if and when possible, with the content of other subjects (e.g., the great geographical discoveries from XV century are learned both in history and geography)?
- Do you know what are your students learning in other subjects?
- How do you feel and how do you react when a student interrupts you while you are lecturing?
- Do you give nicknames to the students out loud or do you keep this for to yourself? What are the nicknames?
- How do you react when your student says out loud that he/she has been unfairly marked?
- How do you react when a student in the course of your lecture asks a question about the things that you have already taught? How do you react when the student asks something that is silly in your opinion? How do you react when a student asks you a question, which you cannot answer at that moment?
- Do you in the course of the lesson notice whether the students are paying attention or not? How do you come to that conclusion?
- Do you in some way notice whether the students understand or not the subject matter you are teaching? What are the signs that show you that they do not understand?
- If you are under the impression that they do not understand, how do you react?
- Do you sometimes bring to the lesson something connected to your lecture (a book, a magazine, a picture, a short text, newspaper clipping, an object, and a document, a photo etc.), and is not in the program, in the textbook or in the school inventory?
- Do you write down several of the most frequent questions that you ask the children while revising or giving marks?
- Have you ever had a visitor in your class (a teacher who teaches the same subject, a teacher of some other subject, a visitor who is not from school etc.)?
- Do you use some students as assistants in teaching and who are they? Which role is assigned to them?
- Have you ever tried together with the students "to build up" knowledge during the lesson, to participate as a partner in problem solving, in thinking out the solutions for competitions, in doing experiments etc.?
- When do you give positive marks: for the familiarity with the academic material, intelligent behavior, cleverness, original work, good behavior, obedience? Do you give a bad mark on account of bad discipline?

- Could you maintain discipline in a class and make the students take an interest in your subject if there were no marks and possible punishment of the students? How would you achieve that?
- Do you give a mark immediately after the student answers your questions and do you say it out loud? Do you tell the student what he/she knew well and what he/she did not know?
- Are you angry with the student who does not know? How do you show your anger?
- Think about your behavior during the lesson as a teacher, and as class master. Is your behavior the same in these two roles or is there a difference and what is the difference?
- What in your opinion are the criteria of the efficiency in teaching? When do you know that your teaching was successful?
- Can the teacher alone, just with his/her work make teaching successful or does that depend on other factors out of his/her control? What are they?
- Which is the hardest and which is the easiest method of work to use in teaching?
- Do you change your method of work (e.g., depending on the lesson or the generation)? What method/methods do you use in your work? What were the selection criteria (they suit you the most, it is the easiest to perform, it gives the best results…)?
- Does, in your opinion, the students' activity influence the efficiency of teaching?
- Can you based on your own experience illustrate the main weakness of the scheme: lecturing - textbook - oral assessment? Why do teachers use this method of work most frequently?
- Do you know how do students learn your subject?
- Which part of your work, which phase in your teaching demands most of your time, work and engagement:
  - the preparation of the lesson material
  - finding teaching aids for lecturing
  - lecturing the new academic material
  - activating the students during the lesson
  - testing the students - checking how much the students have understood of the taught academic subject matter?
- Which phase is the most difficult for you? Are these phases a matter of routine for you?
- Do you know how the students call you, what is your nickname/nicknames?
- Think of all the difficulties that you come across when you try to make learning more efficient, longer lasting, better and more useful? What is your attitude towards these difficulties? Can you cope with these difficulties or do you need help for that? Whose and what kind of help do you need?
- What has a greater influence on your students: you as a teacher or you as a person?
- After what period of time do you form a final opinion of the student, about his/her abilities and his/her level of interest for work?
- Do you follow advances in your profession and do you use them in regular teaching practice even though they are not set by the curriculum?
- Some parents think that the school is more responsible for the education of their children than they are themselves. What is your opinion of this issue?
- Look at the text *Inventory of Teacher Roles in Instructional Process*. Imagine yourself in these roles, which of these do you use and which you do not?
- Look at the text *Teaching/Learning Methods*. Which of these methods do you use and which do you not? Which do you use most frequently?

PROFESSIONAL DEVELOPMENT OF TEACHERS AND ACTIVE LEARNING

The Active Learning is one form of in-service teacher training, a preparation of teachers for the application of different methods of work with children. The change of teaching/learning methods, necessarily induces different teacher roles, with different demands. Even though it is often said that the school is just a preparation for life, every educational system falls behind the changes in society. Also, in education changes happen much slower, while encountering a lot of resistance. Nevertheless, social changes bring forth new needs and demands, asking for a different kind of education.

Our time is characterized by exceptionally numerous, diverse, and often radical changes in all segments of human life: globalization (especially in economy, where everything leads to a connected, unified, world economy) with the world economic, cultural and political co-dependence on the rise. Consequently with the process of globalization, the "cultural nationalism" is rising, i.e. the need for preserving one's own distinctiveness, specific cultural identity, there is a "knowledge explosion" (in the course of ten years of schooling, today's students encounter more facts than their grandparents throughout their entire life), the knowledge becomes outdated rapidly (with the swift appearance of the numerous new facts and knowledge, for example 50% of professional knowledge of an engineer is outdated in five years), efficient electronic communications are developed fast (just on a single CD you can store 250000 pages of text, which equals to 500 books, and costs fifteen times less than printing). The market is dominated by small cooperative companies with the high degree of management and decision making involvement (e.g. in the 80s' United States has created 22 million new jobs in different fields, 90% of which in companies with 50 or less employees). This all leads to the change of the nature of working place and the increasing need for educated workforce (the majority of jobs performed by unskilled workers already does not exist, and it is in decline).

Obviously, these new trends of the world development are putting different demands on the education, asking for a different preparation for life for students. In order to cope with the nature and intensity of changes in the surroundings, certainly having the ready-made knowledge can hardly be enough. It is necessary for people to be capable of perceiving; defining and solving problems; creating innovative solutions; effectively presenting their knowledge; to know how to communicate and work with others; people open for the changes and new possibilities; trained for choosing and individual decision making; people who know themselves well, and have developed self-respect; taking responsibility of their own education and run their life.

In order to raise such persons, the schools must change. In education, things change very slowly, but if we have in mind only the fact that 80% of today's school children will do jobs that don't exist yet as the adults, while using technologies that haven't been developed yet, it is clear that necessary changes must occur in this field.

At one time the prevalent opinion was that the development of science and technology (especially in the filed of communication) would slowly squeeze out the teacher from the school and the process of learning. The current educational analyses of the future show the opposite trend. They emphasize *that the teacher is the key bearer of those changes*, he/she is at the *epicenter of educational reform*, but a reconstruction of his/her current role is necessary and needed.

In the latest discussions about the roles and the status of teaching, there is ever-increasing talk about **teacher professional development**, and not about the education or training of teachers. It could appear that it just a "play on words", however, this isn't just a mere change of wording, but the change of concept of our view of teachers, their training, their role in the school and community.

At first, there's been talk about *training for the teaching profession* (meaning training for the implementation of a certain curriculum), then the concept of training for lecturing on particular academic materials has been expanded to *teacher education* (meaning initial education and advanced training), and now there is talk about *teacher professional development* (TPD). Generally, the professional development refers to a development of a person within his/her professional role and includes formal experience (participation in seminars, workshops, professional conferences, working with a supervisor, etc.), as well

as informal experience (following the literature, reading professional journals and publications, watching TV programs devoted to a certain academic subject matter, etc.). The professional development is a broader concept than career progress or in-service teacher training (just one of the systematic measures used in the development of teachers)and refers to the long-term process which would include various possibilities and experiences that have been systematically planned in order to increase the professional growth and development of teachers. Some authors talk about the combination of three types of knowledge in the TPD (Cochran-Smith and Lytlt, 2001)[10]:

1. the knowledge for the practice - includes the academic knowledge and researches based on which the formal knowledge and theories for the teachers have been derived, in order to be used for practice improvement;

2. the knowledge in the practice - one of the most important teacher knowledge is "practical" knowledge, acquired through practice;

3. the knowledge about the practice - the knowledge can not be separated into formal and practical. The knowledge that teachers need develops when teacher has been given a possibility to think about his/her practice, to reflect on his/her experience, and to investigate at his/her working place, in order to learn more about efficient teaching/learning, and as a result of these reflections to change his/her own practice.

[10] In: Villegas-Reimers, E. (2001): Teacher Professional Development: An International Review of the Literature, Wheelock College, Boston

The key characteristics of the new concept are the notions that it is a continuous process, systematically planned and life-long, located in the school itself, and focused on the improvement of the quality of work (especially student achievement) through cooperation with other partners and the position of the teaching profession in the society.

The basic characteristics of the TPD model are given in relation with the existing model of teacher education (see Table 3).

Table 3: The basic characteristics of teacher education and teacher professional development models (T stands for teacher)

Teacher education	*Teacher Professional Development*
One-time teacher training (initial training of T). In service T's training usually involves attendance of single training courses which provide T with new information about certain aspects of the work, and they are usually not connected to his/her job.	Long-term **process**, permanent, phased (academic education is just the first stage in the preparation for the role of T). Includes experiences acquired outside of the formal educational system or advanced training.
Training and education of T are located outside of the school, and mostly they don't have any relation to teacher's practical experience.	TPD is a process occurring in a specific context, most efficiently **TPD occurs in the school**, closely connected to the daily activities of T's and students.
The education of teachers is the responsibility of certain institution (e.g. Teacher's College).	TPD includes a **complex dynamical model of cooperation between a number of different institutions**: universities, research institutions, government expert organizations, NGOs, professional associations, schools themselves, etc.
The model is based on the concept of knowledge transmission and T is in dominant role of transmitter/lecturer of the selected knowledge.	This model is based on the concept of **knowledge construction**, therefore T is consedered as a professional who thinks about his/her work, practice and continuous learning.

T interprets researches and theories of others; T is a transmitter of somebody else's knowledge.	T is making his/her own reflections about his/her practice, and based on them carries out minor researches (T as a researcher). T is a **knowledge creator**, many of these reflections, the results of research and experience, are in return, incorporated into his/her teaching, changing and modifying it to actual conditions.
Instruction separated from the actual, real life and practice - fixed curriculum, T transmits a given curriculum.	The teaching is closely related to the real life, specific needs and demands of that context - **flexible curriculum**, and T is someone who creates the parts of the curriculum which have been modified to specific working conditions (bearing responsibility for them).
T usually isolated (even from the colleagues lecturing the same academic subject), T consults the others when appropriate.	**Team work of T** and his/her colleagues has been systematically planned in defining T's duties. TPD is a cooperative process, and even though there is room for isolated and reflective work, the most efficient are meaningful interactions with T's, as well with expert associates, parents, community members.
T's working hours is mostly the time spent in the classroom (except for writing the class preparation, commonly reduced to copying old preparations, and not creating new lessons for the given material).	T's working hours includes mandatory **work besides direct work with children** (e.g. a half of his/her working hours is teaching, while the other half T is required to spend on advanced teacher training, familiarizing with the advances in his profession, in exchange with colleagues, joint work on problems, small researches, work on curriculum, etc.), team work, alone and with others.
In-service T's training is a personal thing, personal choice (decision whether to join some form of advanced training, the system does not oblige him/her to do so).	**Continuous in-service** T's training is compulsory part of his/her role, built in the system of upgrading and development in profession. T can not avoid ITT, and it is expected from him/her to bring innovations into his/her practice.
Occasional evaluation of T's work (supervisor or inspector comes and evaluate his/her work).	**Continuous monitoring and regular support** and assistance to T in his/her work, with steady feedback information.
Supervisor's evaluation of T's work.	**Various evaluation models** in which T does not get a "verdict", but through exchange are given feedback information on his/her work. The purpose of evaluation is to enable the exchange of good results among people dealing with education.

T's promotion is always "departure from the classroom" (he becomes school principal, supervisor, etc.), i.e. when promoted T stops working directly with students.	Professional progress **(upgrading) occurs within the classroom** (i.e. T continues to reach, work with children), the differences between teachers evaluated according to the quality of their work.
The context is rarely taken into consideration, a single model of T education is universal for all T's.	There are **many models of TPD**, and the optimal will be selected according to the implementation context. Only one superior model of TPD, universally applicable, does not exist. Schools and their staff should assess their needs, believes, previous practice, and based on that decide on the TPD model efficient in that context.
T is not included into the school reform, generally the reform prepared in the Ministry and "delivered" to T's to become acquainted with it and subsequently implement it (a top-down model).	**The part of the reform** is developed exactly in the school (school-based reform), T's and their colleagues have the obligation to participate in that effort. T's are treated as professionals working on changes in the school or curriculum.
T is on the margin of the social events, usually does not participate in changes in local community.	It is expected of T to be a live **agent of changes in the school and local community**, to actively participated in the life of school and local community.
Unions are the main form of teacher organization, they usually care about T income.	It's been insisted on **professional associations** of T's that would care about the position of profession, as well as professional development of T, organization of different kinds of professional assistance to T's.

Within the framework of TPD, it's been insisted on the teacher professionalism. The teacher is not just a worker, repeating a certain pattern of actions, for which he/she has been previously trained and practiced. Nor is he/she an artist, a person "born for such vocation", where his/her development is seen as a "natural" process happening according to its own inner rhythm that can not be influenced. For years, there has been a discussion whether teaching is just an *occupation* or a *profession*. The vast majority of teachers' unions in world, think of teachers as workers, mostly worrying about teacher salaries, but only few of them do something to help teachers to realize and improve their professional status in the society. This debate on teacher professionalism, is not just a semantic disagreement, but each view has numerous implications for defining a concept of the teacher and his/her professional development.

Insisting on the definition of teacher as a professional, implies that he/she should have specific knowledge and skills, but also the autonomy to use them in decision making. Various analyses of the teacher as a profession are based on the five professional criteria:

1. Social function - instruction/schooling has an enormous significance for the welfare of the society and each individual, therefore, the teacher is a profession;
2. Knowledge - the knowledge of teachers was a source of many debates, some emphasizing the particular knowledge of academic discipline they teach, while others insisting on pedagogic knowledge. However, the main dilemma is are we talking about specific knowledge acquired only through

special forms of training and education. We are talking about knowledge that can not be acquired through practice only, but is based on theoretical models and understanding of ideas;

3. Autonomy of a practitioner - teachers have little autonomy in their work (especially if compared to doctors, lawyers, etc.), their autonomy is limited by the state, the Ministry, principal, inspectors, local community, etc. They have a predefined role, a given curriculum to realize, often they have a preset script of everyday classroom activities. In countries where teachers have a higher degree of autonomy in defining their work and practice (e.g. France, Great Britain, USA), their perception of their own job as a profession is different than in countries where there is little or no autonomy at all;
4. Collective autonomy - In most countries teachers are "government employees", expected to carry out the educational policy of their government. To which degree has one organized profession, such as teacher profession, been consulted in shaping that policy, is the matter of collective autonomy and varies from country to country. In majority of countries teachers are more organized into unions than professional associations, resulting in almost no influence on the program of *initial teacher education*;
5. Professional standards - it is very difficult to define a certain set of values in teaching profession. For the majority of professions, the professional standards could be derived from the amount of service it provides for the clients. Also, in many professions exists the ethical codex as a guidance for the professionals (just few countries have ethical codex for teachers).

When we consider these criteria, it becomes clear why there is a heated debate whether a teacher is a profession, and could teachers do something to improve their social status. The most authors emphasize that teacher professionalism is a requirement for the successful improvement of the quality of education, thus very important for the creators of educational policy.

Obviously, the concept of teacher professional development entails a lot of changes in the existing concept of teacher profession: different concept of learning (how the child learns); broad, quality and constant education of teachers; continuous teacher education (formal and informal) and teacher professional development make up an entity, a unified system; teachers are not workers, but professionals. However, successful professional development has a significant influence on the performance of teachers in and out of the classroom; the teacher differently perceives himself/herself, his/her role, modifies the practice in the classroom, participates in changes taking place in schools and education, he/she is initiator of changes in his/her own surroundings; student achievement is better, of higher quality, and closer to the real life outside of school.

Of course, by changing the concept of the teacher, many problems emerge: different structure of working hours; different ways of teacher evaluations; different system of upgrading and salary increase; different requirements in teacher education; higher requirements ask for the higher quality staff (until now, the tendency being a negative selection of educational workforce); in order to maintain the quality workforce, better material and working conditions are needed; different roles of teachers for working with children; requirement for the change of basic university teacher training; cooperation of different institutions in order to ensure teacher development within their career; different selection procedure for teaching professions, because the in-service teacher training can not be a substitute for the quality of people entering the teaching profession or the necessary conditions for good instruction at school. The list of problems (unfortunately, not ending here), indicates that the quality of education can be obtained only by raising the quality of people and professions involved.

At the end of this TPD review, as a new concept of teaching profession, let's return to the ALT, and the way it examines the teacher and his/her roles. The degree of agreement between the ALT concept and the TPD trend is for you to discover by consulting the sections of this *Manual*. The following questions and statements could be used as a guideline:

- Which teacher roles are dominant in the actual school practice, on which the ALT insists? By changing the methods of work, which teacher roles are highlighted,

and which are the new one? (see: *Inventory of Teacher Roles in the Instructional Process*)

- How does the structure of teacher's working time in the active school look like?
- To what degree is the training for the application of the ALT methods connected to the actual practice? (see sections: *Creation of the ALT Classes: The Outline and Scenario for the ALT Lessons, Market of the Ideas for Creation of the ALT Instruction, Educational Workshops as a Form of Active Learning/Teaching, Examples of Educational Workshops*)
- Post-basic ALT activities occur in the real context, at teacher's working place, in the school, where teacher is in situation to practically apply the ALT ideas in usual conditions see part Various Types of Training for Implementation of the ALT ideas). Where and how does the standard way of teacher in-service teacher training happen in our country? What are the real effects of this system of ITT?
- The sequentional analysis, and the analysis of the written scenario are the techniques of evaluation of the realized material during the ALT lesson (see Scenario for the Analysis of the ALT Lesson Scenario, Sequential Analysis of the ALT lesson). At supervision seminars (see: *Various Types of Training for the Implementation of the ALT Ideas*), the participants, grouped in teams or on their own (having completed the basic seminar and implemented the ALT ideas in practice) are trained for the critical constructive analysis of their lessons (or scenario for the lesson) using the learned techniques. Based on the provided information, compare the degree of teacher involvement in the assessment of his/her work in ALT, actual school practice, or TPD?
- Similarly to the seminar implementation, the ALT insists on the cooperation of colleagues (of the same and different professions) in preparation and realization of the lessons. How much room for the team work of teachers teaching the same academic subject, or teachers and expert associates is left in the existing schools? What are the main barriers for this kind of work (team work) within the existing school framework?
- Throughout the *Manual* it has been emphasized that the ALT seminars are not a goal on their own, but means for providing adequate tools for teachers for changing the everyday teaching practice. Therefore, our aim was to change the kind and type of educational situations for our children, as well as the methods of doing that. The whole chain of the ALT activities has been created for supporting this aim: the basic seminar, practical implementation, supervision seminar (for teachers to learn how to evaluate what they've done), again practical trials, than analysis of what's been done in small teams of teachers and expert associates in their schools, than further practical implementation, again analysis of the completed work, then new joint outline of the ALT activities, then their analysis..., and so on, while constantly questioning what do we want to achieve and how successful are we at accomplishing that goal. Consider the consequences of this concept of work on teachers and their position. What kind of assistance is necessary for the teachers in their education and professional development in order to support this kind of continuous introduction of changes in education?
- What kind of changes in the school itself is caused by application of the ALT ideas, and how is that reflected on the system of education as a whole?
- One of the very important (for us) consequences of working in the spirit of the ALT is the increased teacher motivation for work, their greater involvement in professional matters, showing a bigger initiative in the work, as well as the local community, systematic reflection of their own practice, exchange of those viewpoints with others, and conscious, meta-cognitive relationship toward their own knowledge, experience, better insight into the quality of their own work, specific in-service teacher training for inadequate practice, etc. Consider how necessary are these teacher qualities for the formation of the professional identity, growth and development? Think about the ways of forming the "professional awareness" in a certain profession. According to your opinion, what is the relationship between the professional identity of teachers and the position of education in the society?

INVENTORY OF TEACHER ROLES IN INSTRUCTIONAL PROCESS

This text is a result of our attempt to classify the roles of the teacher - expectations and requirements - mentioned in a great number of psychological and pedagogic works and in practice. We shall try to give a systematic review of the possible teacher roles in the instruction, and with the twofold aim:

1) In order for this review to assist the teachers in reconsidering their own teaching practice (which of the roles they recognize in their practice and to what extent do they fulfill them);
2) In order to have a basis for the discussion at the seminar itself.

Certainly, this text can be used for other purposes, e.g., as an "evaluation instrument" for defining which teacher roles are dominant, and which ones have been neglected in a certain school or in the school practice. These reports are extremely important for us to have a clear insight in the real situation, especially when our aim is to change something. Also, teacher roles can be seen as an operational description of the teacher's workplace, which clearly shows how complex, delicate, serious and hard work this is; then it serves as a "guide" in defining the optimal conditions for the teacher work, but also serves other purposes, depending on the needs and the ideas of the reader.

It should be mentioned that in the school practice certain teacher roles usually overlap. However, this does not mean that it is impossible to distinguish them quite clearly or separate them.

I Teacher roles

1. Teacher as a lecturer:

Activities of the teacher in the process of instruction:

1.1. Transmitting information, lecturing curriculum material, presenting the content:

- Uses pictures, symbols and manipulative material and encourages the students to use these materials;
- Formulates problems, defines, describes, clarifies, demonstrates, generalizes, interprets, classifies, compares, contrasts, concludes, joins, transforms, implicates;
- Repeats, sums up, points out what is important (verbally or by writing on the board).

1.2. Leading the instructional process

This role refers to guiding the learning on the whole, it refers to everything the teacher does in the undergoing process, in the dynamics of the lesson, in order to make the students understand and learn easier:

- Uses chosen teaching techniques, principles and methods of work;
- Uses a chosen didactic and other aids;
- Prepares and introduces the situation of learning;
- Connects the integrated knowledge with the knowledge from other subjects (transfer of knowledge);
- Points out the possible applications of knowledge acquired during the lesson in real life, practical situations.

2. Teacher as an organizer of instruction

- Sets the aim of the lesson (focuses the problem);
- Plans the teaching material, means, equipment, audio-visual techniques for implementation of the lesson;
- Plans teaching forms and methods of work for the lesson;
- Plans the time needed for the realization of the lesson and the schedule of the allocated time according to the functions of the lesson.

3. Teacher as a partner in pedagogic communication

This includes all the questions, requirements, tasks and reactions that have as their goal to encourage professional interaction, i.e. they are in the function of student learning:

- the teacher asks questions, demands, gives verbal and non-verbal messages and answers them;
- the teacher gives opinions, judgments and encourages the students to express their opinions, their judgments;
- the teacher offers advice as a reaction to the students' activities in the class or at their direct request;
- the teacher encourages teacher-student and student-student interaction;
- the teacher provides positive and negative feedback: by accepting the answer (giving stereotypical approval, by repeating student's answer, or by replying in a specific way) or by not approving the answer (in a stereotypical, specific or ironic, accusing, critical, ridiculing way);
- the teacher models class discussions (by accepting, rejecting, modifying or expanding the subject of discussion), as a facilitator of the discussion or a partner who plays a specific role in the discussion, with the aim of encouraging interactions in the class;
- the teacher links the curricular content with the existing out-of-school knowledge and experience of students;
- the teacher accepts students' reactions to the new academic subject matter, makes it possible for the students to ask freely, research, construct and experiment with the new curricula;
- the teacher accepts students' mistakes as important information in acquiring and understanding the curriculum, or as an illustration of a developmental phase of specific knowledge ("at some point scientists thought the same, but….");
- the teacher trains students for an independent evaluation of their achievements in the academic subject (defining the criteria for success in the particular subject), by a detailed analysis of students' answers, mistake, activities in the class;
- the teacher develops students' opinion: makes their spontaneous statements more precise, paraphrases and answers back to the students, clarifies what has been said, leads the student by asking additional questions, invites the student to present his/her opinion accurately, to generalize his/her attitudes, to distinguish between the essential and nonessential, etc;
- the teacher complements the class work, invites students to test what has been presented, to comment what has been done, guides students' independent work, offer help when asked by a student.

4. Teacher as a professional, an expert in his/her academic discipline

This category of teacher roles usually provokes misunderstandings. We've came across opinions that this category can not be differentiated, because the teacher always must be an expert in his/her field of work, or else he/she is not a teacher. Of course, nobody doubts that the teacher must be professionally qualified for his/her job, but when we talk about the teacher in the role of an expert, we think about the following: *the extent of following the advances and literature in a certain discipline, and incorporating the novelty in his/her teaching*. For example, does the teacher some of the research results, new theories, or methods of work incorporate into his/her lessons, adjusted to students' age, and by doing it, achieves the innovation of practice.

4.1. Teacher as a model of intellectual behavior in an academic discipline

- the teacher as a physicist, biologist, historian, etc., represents a model of how one should think, work and research in this area, provides the students with a model of appropriate techniques and strategies of intellectual work (how to perform experiments in the specific area, what are the characteristics of the research, etc.);
- as a model of intellectual work the teacher enables the students to work independently in the given area, to find and independently use the required information, to approach and solve problems, etc…

4.2 Teacher as a "database" for a given discipline,

- The student is in the position to ask and get "instant" information which he/she is interested in the given discipline, regardless of whether they were planned in the curricula or not.

II Motivational role

This is an important and challenging role in which the teacher solves the problem of how, and in what way to develop, encourage and maintain curiosity and the hunger for learning in students; how to develop, encourage and maintain students' interest in intellectual work; how to motivate the students for work in subjects areas that are difficult (difficult to understand, or when they fail to see the sense and purpose of that learning), sometimes distant, but with a full justification for their being taught in school; how to develop and maintain working habits in students.

1. Motivation of students for work and maintaining their interest

This role covers all types of teacher's actions whose goal is to activate the child and encourage him/her to learn and to work, and to maintain his/her interest:

- teacher as a pathfinder, a seeker of ways for certain knowledge to reach the child (e.g., chemistry teacher is not in the role of a chemist, but a mediator, who mediates the process of transferring chemistry knowledge to the students);
- developing internal motivation for learning (the aim of learning is to gain knowledge, get answers, satisfy curiosity, master skills) vs. the external motivation (learning for marks, praise by parents or teachers, etc.);
- using the existing students' interest to bring the teaching closer to students and make it more meaningful and interesting;
- encouraging the existing and creating and developing new students' interests;
- following the fluctuation of attention and the method of drawing and keeping the attention during the lesson;
- methods of awakening the interest in the academic subject matter presented during the lesson, and a desire to understand and learn the presented matter;
- the teacher makes the work pleasant and interesting;
- using students' interests as the basis of educational/professional consultation.
- using positive rewards (praise, prizes, standing out from the rest) for modeling the desired student behavior.

2. Teacher as a personality - model for professional identification

With his/her specific method of work, skillful transmission of knowledge, his/her "personal equation", the teacher attracts the children, encourages them to develop liking for the subject that he/she teaches, to devote time to it, makes them want to identify themselves with him/her (they want to be like him/her/her), so that for some of them the academic subject he/she teaches becomes their professional vocation.

III Role of the evaluator

1. The evaluation in the knowledge domain

- the evaluation and all types of interventions which provide a feedback on the success of the learning process;

- all forms of giving marks and evaluating the knowledge: oral exams, tests, marking of homework, exercises, papers, presentations, seminar papers, collections, products of students' activities etc.;
- all forms of verbal and non-verbal approval and disapproval of students' work by teacher;
- comments and remarks on students' work (kind, angry, critical and ironic… which are in the function of qualifying students' knowledge and capabilities);
- analyzing individual student achievement in regard to his/her abilities, working habits, motivation for work;
- the frequency of positive (praise, prize, etc.) and negative (punishment, criticism, ridicule etc.), verbal and non-verbal reactions to student activities during the class.

2. Evaluation of students' behavior and personality

All teacher interventions (marks and evaluations), which provide a feedback on the behavior and the personality of students:

- publicly, in front of the class, comments and qualifies the behavior and the personality of the student;
- drawing attention to a model student ("follow the example of …");
- existence of the "teacher's pet" in the class, model student for desired behavior;
- the names teacher uses in addressing the students, the nicknames that he/she gives them.

IV Cognitive-diagnostic role

This an intellectual, cognitive, diagnostic role, i.e., the teacher identifies the level and the type of student's knowledge, how much the student can do, how he/she thinks and works, what are his/her preferences and interests, etc;

- diagnosing individual abilities, preferences, talents, potentials, learning ability of the students;
- familiarity with cognitive style of students (the way the students learn), their academic and intellectual competencies;
- recognition of individual differences in students' abilities, their maturity and readiness for specific types of teaching activities;
- observing and following students' intellectual and learning changes;
- knowing the students' maturity characteristics (what can be expected in intellectual terms from students of certain age).

V Role of coordinator of social relations in the class as a group

This role is especially prominent in the function of the class advisor, but we also encounter it in subject teachers in teaching as well as in performing out-of-school activities. This role includes:

- the way in which the class discipline is maintained (control with direct intervention, indirect control, or control by creating a specific situation);
- fairness in relations with students in evaluating the knowledge and behavior;
- influence on the social climate in the class: open-closed, neutral, atmosphere of competition or cooperation, encouraging group homogeneity vs. "breaking up" the class for easier control (supporting "the tell-tales" and "snitches");
- influence on teacher-student relations and student-student relations;
- different roles of teachers as members of social group - class: facilitators, organizer and initiator of social activities, equal member of the group, etc.;
- being familiar with the social status and the level of adjustment of students in the class (favorite-rejected etc.);
- attitudes toward to members of "non-standard" groups (Roma, Blacks…);
- resolving conflicts among students, i.e., encouraging students to resolve their conflicts themselves;

- methods of resolving teacher-student conflicts (independently, in discussion with the class, includes others: principal, parents, school psychologist, etc.);
- the teacher, as a social model, transmitting specific system of values (evaluates the kind of the system of values of individual students and deals with that and explains the existing system, possibly influences it, educational role of the school).

VI Role as a partner in affective interaction

This role is manifested in three types of activity:

1. Being familiar with the mental health, affective states and the needs of students of different age groups and the way in which the teachers react to them:

- being familiar with emotions and needs (the need to belong to a group, the need to grow up, the need for being guided, the need to have set rules and limits, the need for security, etc.), as well as the way in which they are manifested;
- attitudes toward feelings and their manifestation;
- helping children to accept basic human emotions as normal and to constructively deal with them;
- the frequency of positive (emphasizing of merits, encouragement, using endearments and humor) and negative (ridicule, punishment, mimicking) verbal or non-verbal reactions to children's behavior.

2. Diagnosing (non-professional) of psychological states in students (diagnosing severity of problem).

3. Taking steps to help the child, when necessary, from talking with students, parents, psychologist, to sending the child to a specialized institution.

All three types of activities develop on three levels:

a) current affective state of students (scared while questioned, temporarily confused, absent minded, etc.);

b) permanent emotional characteristics of a child (shy child, inhibited, aggressive, etc.);

c) developmental problems and crises (adolescent crises, family crises: divorce, etc.).

- THE WORLD IN WHICH OUR CHILDREN WILL LIVE, CHANGES FOUR TIMES FASTER THAN OUR SCHOOLS.

Wilard Dagget, Ph.D., director, "International Center for Leadership and Education"

GUIDELINES FOR STUDENT ACTIVATION IN INSTRUCTION

In the attempt to promote student's activity from declarative requirement to real action in the classroom, we need to identify what are the activities, procedures, acts, and ways of work that will initiate, encourage and develop student's adequate activities and attitudes in instruction. The main goal of activating the students is achieving a true rationalization of school work, i.e., the aspiration for teaching effects to be better, of higher quality, longer lasting and to be realized faster and more efficiently.

The list of procedure that we are giving in this material is neither detailed nor final. Purpose of this list is not to be a final recipe for efficient teaching, because giving advice (not to mention recipes) is very difficult and ungrateful in this field. Whether these given procedures will be efficient or not and to what extent, depends on many factors, first of all on how they are used, on the context and the atmosphere in the class, as well as on the teacher - student interaction and the interaction among students. So, there is no procedure that could guarantee good results on its own. The aim of this material is to stimulate, to revive, to move and to give an idea to the teacher, in what direction to look for and develop methods for better teaching, to make him/her receptive to recognizing these problems and to help him/her cope with them in his/her everyday practice.

What are the acts and procedures that initiate and develop student's activity?

I Diagnosing the initial state: establishing the level of children's previous knowledge

It is very important to establish the level of knowledge and experiences that children have, so that the new curriculum is a logical continuation of expanding knowledge about the world in us and around us, so it becomes clearer and more useful. In that way we can develop students' interests for the world around and wake up "hunger for knowledge". By establishing children's previous knowledge we have an opportunity to review and establish facts, terms and terminology that children already know.

1. Establishing previous knowledge and experience that are necessary as the basis for new ones:

- establishing what do they know about the phenomenon they are going to learn;
- establishing the level of facts that children have (e.g., for the lesson about photosynthesis it is important what do they know about plants, what do they look like, their color etc.);
- establishing the terms that are important for acquiring the new material (e.g., for understanding the feeding chain in nature it is important that they have established term - animal and term - plant);
- mastery of a terminology (are they familiar with the phenomenon and have they acquires a term for it, or they know about the phenomenon but do not know the term, or do they know the definition but do not understand its essence).

2. Establishing children's previous knowledge is an opportunity to review and reestablish facts, terms and terminology that children already use.

- Discovering, "drawing out", as many as possible of children's experiences that could be connected with the given phenomenon, while insisting on differences, because these differences can help shed a light on different aspects of the phenomenon, serve as an illustration for familiarizing with the phenomenon, or as a basis for a story about the origins of this knowledge;
- Identification and explication of ways, methods, means, i.e., establishing and explicating the database, the factual basis needed for presenting the new knowledge.

3. Connecting the existing knowledge and experience with the new curriculum:

- connecting different parts of the previous knowledge and experiences (which can be separated and chaotic) with the new knowledge, thus creating the whole that makes sense. "Search" the existing structure (if constructed) by including the new material or helping children to structure their existing knowledge and experience and to connect them with new ones;
- connecting children's knowledge with experiential base (preparing and performing a small experiment, bringing newspaper clippings and other materials from everyday life that are connected with the phenomenon being learned, planned and focused observation, prepared educational visit to the zoo, museum, cinema etc.);
- arranging the data and expressions, familiar to children, into new relations and discovering the new rules.

II Manners of presenting the new material

1. Problem presentation of the material. A new academic material should be revealed by using children's previous knowledge, so the child notices where the problem, the discrepancy, "hole" in the existing knowledge is:

- defining and explicating the assigned problem. It is good to put the problem in the form of a question, or several questions, so the lesson is a logical answer to the question. It is advisable, if possible, to build the lesson around the tasks, problems that scientists wanted to solve (e.g., the problem of filters on chimneys). The lesson should be organized in small, logical, problem sections.
- when defining the problem that children are going to deal with, it is advisable to give a systematic plan of the lecture, a strategy for dealing with the problem. It is very useful to make comments out-loud about the strategy we are using in dealing with the problem: "So, I have to solve this…"; "I will start with this…"; "Wait, let me see what way is the most efficient…"; "This is what has remained…" , etc. The child sees it as a model of how it works, how to face the problem and how to solve it. This is also the first step in having insight into techniques and strategies of intellectual work.

2. Using questions and tasks in presenting the material. We have already said that it is advisable to put the academic material in a question form. But, questions and tasks should be used as an introduction during the lecture, as a chain of logical dilemmas that follow one another, as a way of connecting various materials ("What is the connection between…"; "We learned that…"; "And what about this…") or as a way to "launch" a new material, by asking the questions that children would answer in the next lesson. This initiated but not completed task can motivate the child very successfully.

3. Presenting material in as many different ways as possible.

- Give the academic subject matter in many variants, show how the same content looks from different angles and beside the verbal presentation you should give the graphic one too: drawings, paintings, graphs, tables, maps and other means;
- make it possible for the children to acquire new knowledge through numerous experiences, accidentally, personally or planned.

4. Demonstrate the development of knowledge. Whenever possible, completed, final knowledge should not be given but we should point out the wrong methods, mistaken ideas, attempts in solving the problem and how the previous paradigm came to be changed. By establishing children's previous knowledge, their different experience and ideas they have about the phenomenon, children's wrong answers can be linked to the attempts of problem solving in science. This way, a wrong answer has a different meaning. It does not mean that someone is stupid / smart, that he/she knows / does not know, it means that even in science there is thinking, making mistakes, correcting mistakes, trying again, that science is not a group of recipes and final results that should be "absorbed", but in fact, it is an open field of work in which there is a lot of positive knowledge, and also a lot of doubt, dilemmas, interpretations, assumptions and a lot of open

space for work. Due to the forming of adequate relation with science and knowledge, it is good to mention problems that are still open and waiting for the solution (e.g., science has not yet solved the problem of wireless transmission of energy).

5. Integration of the material - correlation. Integration of the material provides complete access to school knowledge, so it will not remain cut off and scattered in different drawers of various academic subjects and classes. It also prompts and encourages the child to use freely the knowledge from one academic subject and the every-day life, in other academic subjects and situations.

- Connecting the material with the material (past and future), learned in the same subject in the same class - horizontal correlation.
- Connecting the material from the same subject, but from different grades - vertical correlation.
- Connecting the material from different subjects or different grades (cross - material links).
- Connecting the material with the child's out-of-school life experience.

6. Gradual knowledge buildup

6.1. Adequacy of the new content. That means that the materials are neither too difficult, nor too far from the existing knowledge, so that the child cannot follow it or understand it. It also means that the content is neither too easy, nor too familiar for the child so that it is boring. In the building up of the knowledge, each stage must be mastered well in order to go on to the next without difficulty: from acquiring the knowledge, to analysis, synthesis and evaluation.

6.2. Gradual buildup of concept, rules and principles. A concept cannot be "crammed", only its definition can. One must master the concept through personal, individual thinking. This mastering of concept and principles can be made easier with:

- precise, correct definition;
- clear distinction from other ideas, especially similar ones, as well as principles (giving too many examples, non-examples, counter-examples, exceptions, pointing out border cases, for which it is difficult to say where they belong).
- inductive learning (from individual to general) of ideas and principles should be based on an adequate number of cases because otherwise there isn't induction, and there is no thinking on the part of students, there is just learning the rule by heart, without any examples which are its basis and from which it was induced;
- the use of ideas in different texts from the ones where certain ideas had been learned;
- inspiring the buildup of a hierarchy of ideas and principles (e.g., plant, animal, man, which belong to a higher, more common, idea live being).

7. Explaining new words. Constant explanation of all unknown and less known words, especially metaphors that can be a source of confusion, and misunderstanding of the curriculum. Also, everyday terms that are in some disciplines used in altered and special meaning (e.g., the word church can mean for a child only the building, while in history this term is more complex, and it means the whole institution with its own characteristics).

8. Encouraging imagination. Demonstrating the functions of imagination in innovations (scientific, technical…) and in formation of the scientific knowledge.

9. Using humor as a way to make freer, more relaxing, warmer atmosphere. Mentioning anecdotes that are connected with the matter that is learned, using witty descriptions of persons and atmosphere where some ignorance occurred, connecting cognitively dissonant things etc.

III. Ways of reviewing the material and evaluation of student's knowledge

1. Frequent repetition of the learned material ("Repeating is the mother of knowledge").

- Students' repeating lessons in their own words, by making graphs, boards, sketches, not imitating the model, but independently.
- Students' independent creation of summary of the material (smaller and bigger parts), resumes, reminders, guides through the curriculum.
- Students' independent formulation of questions, tasks, as a way of checking acceptance of the material.

2. Application of the learned material. Organizing school and out-of-school activities that require using knowledge, directly or indirectly, individually and in groups. Bringing students into the situations where they have to try out the learned matter.

3. Analyzing wrong answers. Mistakes are part of the learning. It is wrong to scold students, make fun of them when they do not know something, call them bad names ("stupid", "nothing will become of you", "you do not have any idea"…), but the wrong answer should be used in the following fashion: first, as an illustration for one of the leading ideas in knowledge development, which is meaningful, but does not lead to the solution (child thinks that the Moon and the Sun are revolving around the Earth, and the scientists had the same idea, but they gave it up when they found out that…). Second, the wrong answer could be used as an information about the degree of understanding and acquisition of the material, while establishing whether the mistake is a result of lapses, mechanical mistake in using the process, ignorance of facts, or the student does not know the process or he/she did not acquire the term.

4. Detailed knowledge of learning outcomes (feedback) activates student, because it gives him/her directions what is expected from him/her, it gives insight into the completed matter - what is good, and to what extent, and what is bad and why. This knowledge can be a reviewer of the future activities, a model how something should be done. Child is not confused with the feeling that the mark is an expression of teacher's sympathies / antipathies, or his/her mood, but student gets the assessment of how the expected activity should look like. Detailed returned information about an answer allows students to see characteristics and limits of their own knowledge ("you have to practice writing…", "you are excellent in organizing, remembering the material…"), offers them ways to make up, compensating for deficiencies , and also the knowledge about intellectual processes and strategies for work. What strategy is the most adequate for which task (pointing out, repeating, making excerpts, mnemonics etc., so that the material should be better remembered.

5. Role-playing. Children should be put in a situation where they have to explain something to a younger child, or to prove, defend, or argue some point of view (games pro et contra, prove that… etc.).

6. Free choice of activity. In consolidation, repetition even in checking of the knowledge, situations can be organized, in which a child freely chooses from several offered activities, (to try out an activity, to see how they look, to choose himself/herself the one that suits him/her best). It is essential to offer the students as many as possible various activities connected with a certain matter.

7. Increasing practical competence of the child for managing out-of-school, real life situations:

- the acquired knowledge to be used outside of the school;
- to be able to find the information when needed.

8. Increasing the competence of the student for self learning

8.1. Instruction on how to work with the book (how to use a book, textbook, its content, vocabulary, names etc., how to find books and information).
8.2. Instructions for learning - exercises of active observing, listening, making notes, remembering, pointing out important things, underlining, making questions, nets of knowledge, writing summaries, reviews…
8.3. Informing the students of other sources, on knowledge besides the school lectures and textbooks (the use of TV, newspapers, magazines, other people etc.). It is very important that the teacher points out how he/she himself/herself had come to certain information, knowledge…
8.4. Practicing mutual activities in which teacher and students are in a partner-like, cooperative relation in solving the problems.

All the above mentioned procedures are, in fact, a localizing of the place, a field where much can be done in order to make students active in instruction, primarily in active thinking. How will the activity of the teacher look and where it would be carried out, depends on the choice of activity, his/her skill, ability, wishes and motivation to improve teaching. Above all it depends on his/her decision whether he/she will or not, make an effort and bring in creativity into the preparation of the lesson required by the active teaching.

... CHILDREN CAN LEARN ALMOST ANYTHING, IF THEY ARE IN POSITION TO PLAY, TRY, TOUCH, HEAR, SEE, AND FEEL THE INFORMATION.

Jane Huston

A3. VARIOUS TYPES OF TRAINING FOR IMPLEMENTATION OF THE ALT IDEAS

(seminar types)

In the ALT project development thus far, the main focus was on training teachers and other project participants for implementation of active learning / teaching ideas. In the training system (and it is already justifiable to refer to it as a training system) the concept of a basic three-day (cooperative) seminar of ALT training was developed first. That concept was altered and perfected many times and so far a couple of hundred seminars were carried out (more than 3500 participants have been included by this form of training only). It is a seminar known as a "three-day cooperative seminar", and since other forms of seminars emerged in the later development of the project, this main form of training turned out to be what it should - **the basic ALT seminar**.

However, general development of the project, enlargement of the circle of participants and ever increasing number of attempts in implementing active learning / teaching ideas in everyday school practice, have imposed new activities in the project, such as:

- development of different forms of training for diverse groups of participants in the project;
- development of advanced forms of training (post basic training);
- shifting the emphasis from training to practical application of ideas.

These diverse forms of training will be described in this section of the text.

Basic ALT seminars

The key task of the basic ALT seminar is to introduce the main ideas of active learning to participants, and these ideas are the focal issues of this Manual. Familiarizing with the basic concepts of active learning and designing a personal well thought-out practice in the light of new ideas is the beginning of participation in the ALT project. Of no less importance is the **way in which seminars are carried out**: there is neither forcing of active learning ideas, nor their simple transmission. Instead, the seminar is cooperative in the way that participants contribute their own pedagogic experience into a joint effort, freely presenting their ideas, and equally discussing all problems, while appreciating the differences in view points. During the seminar, all participants jointly seek out the solutions to genuine problems of our education, and particularly to problems related to teaching and learning methodology. This approach resulted in: identification of numerous problems in education, defining dilemmas and recognizing complexities in thinking through the methods of teaching and learning (especially the correlation between objectives, contents and educational methods). However, in the process we also obtained some systematized knowledge (especially on different methods of teaching/learning) and some skills (competencies), such as management skills in carrying out polite, tolerant and informative professional communication. Above all, participants at the seminar experience the very form (model) of active, interactive participative education.

It is important to point out what the basic ALT seminar is not. It does not serve its own purpose, but it is a beginning of long term process of changing attitudes and educational practice of participants, who will afterwards become main carriers of change in the actual educational practice. This long-term goal will be achieved by participating in a whole set of post-basic activities of the ALT project.

Program outline for the basic ALT seminar is found in Appendix 5, and a scenario for its implementation in Appendix 3.

Specialized basic ALT seminars

The makeup of participants in basic ALT seminars was generally diverse: head-class teachers, subject teachers, professional associates (psychologists, pedagogues). In time a need to develop a special form of basic seminar for teachers of a particular subject, head-class teachers and specific educational groups emerged, which we named **specialized basic ALT seminar**.

The main goals of specialized basic ALT seminars remain the same: introducing the main ideas of active learning to subject teachers and primary school teachers. And a program outline for these seminars remains the same. The method of work (active, participative, and interactive work methodology) stays the same. However, because of the specific nature of each subject and ever more complex knowledge in each of these subjects or head-class instruction, the specific contents of a particular section is modified. All illustrations from the teaching practice address specific subject matter, discussions are streamed in a way that emphasizes what methods of teaching/learning are present more or less and what goals are harder or easier to achieve. Educational workshop and the creation of the outline of ideas are also adapted for a particular educational subject.

With these partial changes in the contents of specialized seminars, a better understanding of general ideas of active learning is achieved, because a link between these ideas and teacher's practical experience in teaching a particular subject is established.

As a result of these changes, in the basic ALT seminar two types of basic seminars are created: basic for head-class teaching and basic for subject teaching (for both primary and secondary schools) for each particular subject. At the same time a need to train two types of facilitators, one for carrying out basic ALT seminars and other for further work on the project emerged: professional associates (psychologists, pedagogues) as facilitators for general basic ALT seminars, and class teachers and subject teachers (for their particular subject) as facilitators for specialized basic ALT seminars, carried out in cooperation with specialized associates - facilitators.

In the development of the ALT project a need to introduce some form of **pre-basic training** emerged, as a means of preparation for the basic seminar. The following two forms of training were created in such way.

Promotional ALT seminars

The basic function of this type of seminar is for a certain specific category of future participants in the ALT project to receive a preliminary introduction to the ideas of active learning and in such way becomes motivated for future work. Promotional ALT seminars can be organized in different ways, depending on the participants' profile: presentation of video-clips of ALT seminars (or a mix of different parts of seminars) with complementary discussion; open discussion with the project authors or ALT facilitators; organization of educational workshop with short analysis of what has been done and a joint discussion; carrying out a part of a program of the basic ALT seminar (for example discussing traditional versus active teaching methods); discussion of participants' own teaching practice in the light of active learning ideas; workshop on goals of teaching specific subjects or on characteristics of the ALT program in comparison with other programs (see *Characteristics of Active Learning/Teaching*), etc.

Pilot (trial) ALT seminars

The main purpose of this form of pre-basic activity is to identify and specify the main problems of implementation of the ALT project in a particular school subject or in a specialized form of educational work (for example in school clubs, outdoor activities, summer schools, working with gifted children, working with children with special needs, etc.)

Very similar to promotional seminars, work methods can be quite different, they are followed by a discussion and concept development for the basic ALT seminars for specific purposes, i.e. specialized basic ALT seminars.

Besides pre-basic activities in the ALT, the practice imposed the development of a whole range of diverse **post-basic activities**.

All of the post-basic activities are in fact attempts to apply the ideas of active learning in the school practice, after the basic ALT seminar. This type of training and professional specialization of teachers has a chance of being more efficient than general type of seminars (see: *Professional Development of Teachers and Active Learning*), especially in comparison with general seminars organized by the Ministry of Education, which are as a rule massively attended, lecture oriented and inadequate for participants. Here are the key reasons why this form of post-basic teacher training has far better chance to result in successful change of educational practice:

a) training is conducted in a specific school with teachers from that school or several schools in the region;
b) participant groups are small (usually between 10 and 30 participants);
c) training includes systematic analysis of trial attempts of practical implementation. Every participant has personal experience in practical implementation of the ALT ideas, and has recognized the problems and new opportunities opened by these ideas. Participants are personally motivated for taking an active role because they know what it is about and that the work is carried out in the actual setting - their academic subject and their school;
d) in the course of the practical attempts analysis, teams of teachers solving common problems are gradually formed, which is always more fruitful than independent work of isolated individual;
e) facilitators who take part in those forms of work pass on the experience of others, derived from the implementation of the entire ALT project.

So far in the development of the ALT project the following types of effective practical training for implementation of the ALT ideas have been established.

Supervision ALT seminars

These seminars are intended for those participants in the ALT who have completed the basic ALT seminar and who have individually tried out the practical implementation of the ALT ideas (program for follow up seminars is given in Appendix 5).

The main program for the supervision ALT seminars consists of:

- identification and analysis of the problems that showed up in particular school, region or particular subject in these first attempts of practical implementation of the ALT;
- further training in implementation of the ALT ideas comprised of: training for the analysis of written scenarios for ALT lesson and preliminary training for implementing sequential analysis of the performed lesson (experienced, video-taped or documented in different ways)

It is important to indicate that all exercises in the analysis of practical attempts in implementation of the ALT ideas are based on scenarios or tapes of ALT lessons made by the participants in the seminar (individually or in cooperation with their colleagues) or by teachers from school or region where the seminar is taking place.

It is quite significant that in the development of the ALT, a specific procedure in the analysis of the ALT practice has been developed and, we can say, even a unique culture of such a procedure. The procedure and the culture have been very well expressed by the name and motto of the analysis: **constructive critical analysis** in developing attempts of the ALT practice. Here, we talk about:

- analysis carried out according to the standardized procedure, which guarantees the objectivity of the analysis to a great extent (see *Scenario for Facilitating the Situation of Scenario Analysis for the ALT Lessons, Sequential Analysis of ALT lesson*);
- analysis is jointly performed by a group of teachers and associates, who work on solving the problems in improvement of teaching/learning methods, without criticizing the work of an individual;
- the emphasis is made on analyzing ideas and potentials of a particular idea for resolving a specific goal, not the personality of idea's author;

- analysis is really carried out, i.e. the division of the entire lecture into small meaningful units that are analyzed, while impressionistic judgment and comprehensive statements based on general impression of the whole lecture are being avoided;
- critical analysis is performed, i.e. on every singled out segment of the lecture and on the lecture as whole by determining the meaningfulness of the activities performed by students, relevance level of those activities for the learning of a particular subject and lesson type. The number of children who are active and the duration of every single activity are registered, flaws and problems that were noticed in a particular class under this set of parameters are being objectively determined;
- constructive critical analysis is carried out, i.e. after analyzing the lesson, a group of interested participants tries to offer a number of constructive ideas to solve determined flaws, and all the participants are working on constructive refinement of the class, while respecting the predetermined author's ideas (not changing the framework of author's main idea).

In the implementation of constructive critical analysis thus far, a true spirit of unity among groups of teachers had been developed. They regard every practical attempt of implementing the ALT ideas as a positive attempt that is objectively and well intentionally analyzed and improved in the spirit of the initial plan. That represents the main mechanism of promoting active learning ideas in everyday school practice.

Development and upgrading of a joint - team, critical and constructive work remains the important focus of the ALT project in the future development, and that is the main orientation of work in the supervision seminars and all post-basic activities.

Special forms of post-basic activities

After basic and supervision seminars, a great number of diversified forms of post-basic activities have been developed. The common factors for all of these activities are:

a) they are attempts in practical implementation of active learning ideas;
b) all activities include the analysis of these attempts, carried out by a group of experts most often in the school itself;
c) all of these activities include a rich exchange of professional experience within the ALT project.

The forms of the post-basic activities can be very different, for example:

- analysis of one or more scenarios for the ALT lessons;
- preparation for the printing of analyzed scenarios;
- meetings of teacher groups in one school for the purpose of analyzing the ALT practice;
- organizing discussion panels with teachers included in the ALT project, and those who are not;
- sequential analysis of the video recordings of ALT lesson;
- guest performances at the ALT lessons and subsequent discussions;
- project upgrading or participating in the ALT debate in the local media;
- organizing thematic meetings on how to solve some recognized problems in the ALT practice (marking, group-work related problems);
- discussion on how to implement active learning ideas in some special forms of educational work (school clubs, out-of-school and out of school activities, working with gifted children…) etc.

It is very important to emphasize that these are all **forms of specialized in-service teacher training and particularly productive methods of advanced training**, because teachers learn from their own practical attempts and team analysis of such attempts. Such decentralized forms of learning and in-service teacher training are more successful, because they considerably take into consideration the realistic context in which NEW KNOWLEDGE will be applied and deal with exact problems from that context. Besides, it

provides also the greatest level of activity and teacher self-involvement, and thus his/her high level of motivation (see *Professional Development of Teachers and Active Learning*).

Given that the expansion of the project is based on a "cascade system" concept (first team trains others who then train a wider circle of teachers), special seminars for this purpose have been outlined and carried out. We shall describe some of them here.

Seminars for facilitators

The main purpose of these seminars is to train ALT facilitators who will afterwards independently carry out basic ALT seminars. Program for implementing these seminars is found in Appendix 5.

Training of the ALT facilitators is carried out in several phases:

- training at the basic ALT seminar;
- taking part in the post-basic activities: creation of the ALT lessons (scenarios and performed lessons) and participating in trial (educational) analysis of scenarios and performed lessons;
- training at the supervision seminar;
- training at the instructor seminar;
- assisting to trained facilitators in implementation of the basic ALT seminar and independently facilitating some seminar segments with gradual expansion of the number segments carried out independently by a new instructor.

Seminar for facilitators proceeds from the framework of the basic ALT seminar and directly, through different active and interactive work methods prepares the participants for carrying out of all basic seminar topics. The work at the seminar includes: discussion on conceptual problems, analysis of scenarios for carrying out the basic seminar, analysis of the most common mistakes in implementing the seminar, simulating the execution of some seminar segments, playing the role of facilitators and analysis of such trial attempts, discussion of specific goals of each basic seminar segments.

Specialized ALT seminars for facilitators

The main purpose of this seminar is to train subject teachers and primary school teachers for the role of facilitators. Clearly, these facilitators are specialized for the work in particular school subjects and in head-class instruction.

Training for specialized facilitators is carried out almost in a same way as the general instructor training. There is a certain difference because some of the teachers have attended specialized basic ALT seminar. Of course, the differences are in the contents of the post-basic activities and in the contents of the supervision ALT seminars, because these activities are implemented based on the content of subjects, or of head-class instruction.

Through specialized instructor seminars, teachers - facilitators of active learning/teaching are being trained. Their main job, above all, is to implement the specialized basic ALT seminars, and to take part in the post-basic activities in their school subject, or in head-class instruction.

Supervision ALT seminars for facilitators

The main objective of these seminars is further specialization of facilitators in their specific domain (head-class instruction, academic subject instruction).

The main contents for the supervision ALT seminar for facilitators is:

a) analysis of instructor's practical experiences (ALT lesson scenarios that were done individually or in cooperation with others, performed lessons, discussion on instructor's involvement in trial analysis of the ALT scenarios and performed lessons) and the analysis of implementing the basic ALT seminars.
b) practical training in carrying out the ALT lesson scenario analysis and performing sequential analysis of performed lessons.

ALT seminars for inspectors/supervisors

The main goal of these seminars is to train inspectors/supervisors (depending on their role) in providing support to the schools and teachers implementing the ALT ideas and to train them to cooperate with ALT teachers and facilitators. Outline for these seminars can be found in Appendix 5.

The content of these seminars includes an introduction of the main program ideas (ideas can be critically analyzed), discussion on conditions for practical implementation of these ideas in a specific region where inspectors/supervisors work, preliminary training in analyzing the ALT scenarios and demonstration of sequential analysis of performed ALT lessons. The central activity is to jointly (by participating) define the roles which inspectors have in practical realization of the active learning ideas in their continuing cooperation with teachers, professional associates and schools who participate in the ALT project.

ALT seminars for school principles

The content of these seminars and work methods are essentially the same as in seminars intended for inspectors/supervisors, only this time the focus is on training the school principles for specific roles in supporting the ALT implementation in their school. Outline for these seminars can be found in Appendix 5.

Besides the above-described forms of training for participating in the ALT project, different types of seminars for specific partners in the project, such as seminars for journalists who create papers and magazines for children, have been implemented as well. It is most likely that seminars for other interested groups will be carried out, e.g. for publishers of children's books and textbooks, associates of some departments in the Ministry of Education, teachers in the secondary schools, military schools, preschool institutions, methodology teachers in colleges and faculties etc.

- COULD LOVELY EDUCATIONAL EPISODES ONLY OCCUR OUTSIDE OF THE SCHOOL?

Svetlana Marojevic

PART II

PRACTICAL IMPLEMENTATION OF THE ACTIVE LEARNING PROJECT

Introduction

At the very beginning of this *Manual* in the text *Introductory Remarks*, it has been said that it serves two main purposes - training teachers and the application of active teaching / learning methods.

Teachers in the teaching process have a very powerful role (there are very few professions where the human factor plays such significant role as in education), that is why every teacher training, by it nature, is a beginning of practical application. But, besides these significant changes of a teacher, caused by every effective training, the possibility of introducing practical innovations into education depends on other powerful factors. Modern education is a very complex endeavor, and complexity of its different structural components can be so negative, that it can lead to the interference of the productive usage of human resources in the end.

Because of the practical results of the Active Learning/Teaching project, which represent a serious attempt of innovation and modernization of our education, it is important to avoid illusions that were the cause for failure of many reforms that had been implemented in our country.

Failures of these reforms have the same origin, which is unfortunately, the most common model of thinking in education. That model suffers from the Enlightenment's illusion of believing into the declared, that it is enough to declare goals of a reform, and adopt some educational documents with explanations of the basic ideas of reform11. As if everything had stopped at discussions about the reform. Never, or almost never existed the program for the reform introduction that could cause changes of some determinants in education (e.g., changing the way of financing the education or the way of education management etc.). So, here, we are talking about the defects of the basic model of thinking and functioning in education, which is similar to both the education reformers as well as to those who are performing the basic activity in education - the teachers.

And in fact every attempt of changing something in education is a difficult task, just as in other complex activities in modern society. The reason for this is very simple - education is such a complex area that every attempt of changes influences the lives of a large number of individuals (teachers and others that work in education), institutions and system of social structure which are connected with other systems (economy, science, technological development, employment, demographic factors, social stratification etc.).

One simple and thorough question should be asked - why would such a large number of individuals and institutions change their behavior as desired by some reforms? What will make them implement the planned reform, and not continue with the common practice? The answer to this difficult question should be incorporated into the concept and operational plan of the reform.

The changes in education can never be reduced only to their pedagogic component. Reformers were doing exactly that and almost everything was brought down to paper changes of the teaching plans and especially curricula. Usually, there was no verification whether these changes ever reached those who had to implement them, and not to mention that the question of their motivation to realize them, was not even asked.

Instead of this way of thinking, it would be more appropriate to realize that the educational reforms are complex social actions that include a large number of participants (more or less influential individuals, small or big institutions). That is why educational reforms should be like small revolutions or social upheavals that move or do not move some really active factors (what is really clear as far as economy reforms are concerned), and not some educational actions on the level of one lesson or on ignorant verbal propaganda campaign.

In the section *Educational Structure* it has been already said that authors of the Active Learning/Teaching project rely on different models of thinking about education. Of course, the Active Learning Project was at the beginning a modest and limited trial of changing only one segment of education. In the Scheme 1 in this *Manual* this has been presented in two ways: it has been shown what structural components make the entirety of the education, and which of these components have been affected by the Active Learning/Teaching Project *(methods of teaching / learning)*.

11 That fallacy is basically similar to the illusion that the basis for lecturing and transmissive teaching: it is enough to define curriculum, and lecture accordingly (in our system of educational supervision it is very carefully checked if the teachers had lectured everything according to the curriculum) - and the main work is finished with that. The naiveté of this point of view is astonishing. It is enough to remind one of a folklorist statement that shows hollowness of that way of thinking about producing the knowledge in school: the thing that has been said does not mean that it has been heard by the one who it was said to, - and even if he heard that, it does not mean that he understood it - and if he understood it, it does not mean that he has accepted it yet - and if he accepted it, it does not mean that he can use and apply that (see: *Review of a possible lecture breakdown, under Meaningful verbal receptive learning*).

Although, the project "Active Learning/Teaching" is a project of partial changes in education, its holders are not freed from the obligation to solve problems of its practical realization (implementation). First of all, the team of authors, remaining faithful to the new model of thinking in education, is completely aware of the limited scope of the project. One intuitive look at the Scheme 1 (upper part of the Scheme) is enough, for anyone to be protected in advance from illusory expectations that the project which affects only one, though extremely important, component of the whole educational system could lead to some global effects.

An attempt of initiating partial changes in basic technology of schoolwork comes, in the given social - cultural context, to serious barriers. Being aware of these barriers - is a prerequisite for every successful work. The team of authors hopes that it is deeply aware of basic barriers they have on their way to the practical realization of these changes.

Even when we put aside the macro - determinants, such as general problems of financing the education, the lack of any educational policy, general poverty of education etc., the basic barriers remain: the teachers' motivation to accept what the project "Active Learning/Teaching" asks from them, the educational management system which, because of exaggerated centralization, has completely deprived separate school institutions and teachers of their rights, lack of direct support for active school ideas at least in the sense of necessary school equipment and textbooks.

Really why would teachers that are paid inadequately, brought to the status of obedient performers of somebody else's decisions on which they have no influence (not even the decisions of their professional competence, such as what textbook they will use for their respective academic subjects, are brought not by the teacher, but by someone else), and which does not encourage any institutional system to work with more quality (not even the system of teacher's evaluation, nor the system of professional promotion, nor the general reputation of the profession), so, why would then those teachers put an extra effort and change their usual way of work.

The team of authors of the project does not have the solutions for these serious problems. Obviously, this is a limitation of the project.

When the educational authorities support to the ALT and similar projects, than the prospects of lasting change in the instructional practice brought by the innovations of this project, have a greater chance of survival. The support of the educational authorities can be multifaceted. On one side, there is a creation of a general favorable atmosphere for the innovations of this kind. The most constructive atmosphere is created when the projects (such as the ALT) are a part of general changes which are mutually coordinated and connected.

On the other side, the support of the educational authorities can be more direct. For example, the teacher training within the ALT project could become the part of an official teacher advanced training program. The system of professional training should become a part of the comprehensive policy on teachers' professional development: the possibility of promotion in the course of the career, the possibility of salary increase depending on the level of professional training, the system of school financing and the teachers' salaries to become an instrument for simulating the quality of work, etc. (see *Professional Development of Teachers and Active Learning*)

Thirdly, the support to innovations of this kind can be demonstrated in the form of a series of systemic measures:

a) the participation in training programs (especially at the school level) should become a part of the teachers' working hours;
b) several hours of teacher preparation for innovative lessons should be included into the working hours;
c) the possibility for a more flexible lesson organization (two joint classes, three joint classes, block of classes, joint classes of different academic subjects, etc.) should be created;
d) the team work of teachers should be supported (especially for the analyses of the innovative lessons);
e) the educational supervisors/inspectors should be trained to act as associates and consultants in the making and the analysis of the innovative lessons;
f) the school principals should be trained to support within their authority the teachers implementing the ALT and similar innovative instruction;

g) the cooperation between the schools and the local community in introducing the innovations into the instructional practice should be systemically supported.

If there is a lack of systemic solutions, as important prerequisites for practical success of this project, we looked for other, optional solutions. The basic ones are: to gather around the project those teachers that are already working in a similar way and who have found their personal motivation (instead of systemic and institutional); to develop the network of teachers and assistants that are working in the new way; to foster the communication among them, till a kind of an intellectual community will be created that will be a support for everyone.

The former work in seminars all over the country, that has included several thousand teachers, shows that these optional solutions are founded on healthy bases. Many teachers find individual solutions for motivational problems for the work on the project. They say: "In spite of everything being so negative I will work in this way"; "I will work just for myself"; "Sufficient reward for me is that in this work I can see the glow in children's eyes". From the former course of the project, it is clear that the work in the spirit of active school, gives greater professional satisfaction for a certain number of teachers and helps development of strong professional identity. It is very important that as a rule, better teachers with stronger professional ambitions and better reputation among the school staff accept this project. This creates a basis for expanding the ideas of active school by "infection". But it is clear that this is not a systemic solution that would include all teachers. Considering all this in the long run - perhaps this is even better after all.

Systemic measures that the project "Active Learning/Teaching" developed for increasing practical effects, are shown in the Scheme 1 (in the lower part of the scheme marked as "Actions"). This is a repertoire of possible measures for the conditions in which the project is realized. The basis for expectation of certain effects is unified actions of all separate practical actions.

Separate measures are based on the following components:

The *Manual* (this is the book that you are holding), which has, because of its origin and its content, greater practical application. We have already talked about this at the beginning of this text. Approximately 6000 copies of the first edition, and about 10 000 copies of this second edition are an important resource at the teachers' disposal.

Video - manual represents teaching through films on the video - tapes, that would show desirable forms of active teaching / learning. It is media-wise a more modern variant of the Manual. A large number of the recorded ALT lessons are a significant asset and sound basis for professional exchange of experience.

Because of the significance and influence of the television, a proposal for a scenario called *Educational TV - Active Learning* series has been prepared, and could be found in Appendix 11. Serious preparations are done for the realization of this TV program, as well as other media presentations.

Training seminars for all that have an influence on the activities in education should prepare a workforce that would become carriers of the project. This work is progressing very well, database is being prepared which will enable the intensive co-operation and exchange among them.

The basic strategy for practical realization (implementation) of the *Active Learning Project* is a network of schools - regional centers for implementation and development of the ALT ideas, N30+.

At the end, maybe the most important thing for practical realization of any project - constituent and essential part of the implementation program is *evaluation*. Evaluation of the initial ideas, evaluation of the process of introduction of these ideas to school practice, evaluation of the process of the project extension. Evaluation defined this way is an everyday activity of those who work on the implementation: keeping and saving documentation about all attempts of applying the active school ideas, following the effects in children, in the teacher himself, in school, in teaching, in the environment. Evaluation of the project, the processes of its application and its effects will be systemically covered as a topic of special projects (see *Model for Evaluation within the Framework of ALT*).

PROGRAM OF WORK IN SCHOOLS WITHIN N 30+ SCHOOL NETWORK

1. Goals of N 30+

N 30+ should provide the fulfillment of the following groups of goals:

1.1. Training

Training will include teachers, professional associates (school psychologists, school pedagogues, librarians, principals, and supervisors/inspectors). This professional training is located in certain schools *(school-based in-service teacher training)*, with the following characteristics:

a) in the best possible way takes into consideration the real needs for in-service training of a particular group of people working in schools;
b) training is directly connected with the solving of real problems of the current school practice;
c) local conditions under which a certain school is working are taken into consideration;
d) training in active methods of teaching/learning is directly connected with the attempts of their practical application;
e) in that way the highest level of participation of the participants in the process of training is secured.

Generally, these characteristics provide mostly the practical usage of knowledge and skills that are acquired in the process of training.

1.2. Practical application (implementation) of active teaching/learning

That function of implementation includes:

a) creating a new atmosphere in our school;
b) the changing of the position of the child/student in the process of teaching so that he/she feels better, participates in the process of learning more actively, practically tries different roles and various activities;
c) the more frequent use of active methods of teaching/learning: meaningful verbal receptive learning, problem teaching/learning, co-operative learning, learning by discovery, creative learning, practical acquisition of skills, methods, actions, procedures of a motor and intellectual nature (especially the skill of finding and using different sources of information), with the elimination of "cramming" and having a smaller number of reproductive forms of learning;
d) the moving of the role of the teacher from lecturer-evaluator-supervisor to the role of a designer, coordinator and facilitator of teaching as well as a partner in the pedagogic interaction with the child/student;
e) the changing of the system of evaluation and assessment, which should become compatible with the changed methods of teaching.

On the whole, these activities in practical application of the active learning ideas are also the most productive form of teacher training.

1.3. Evaluation

In the process of N 30+ functioning, a continual monitoring of the process of implementation and evaluation of everything being done has been built in (see *Model for Evaluation within the Framework of the ALT*).

1.4. Promotion of active school

The general goals of N 30+ are the promotion of a new model of active and interactive school of a new and different way of seeing a child in school and out of it, as an active

participant in the process of learning and living in a community which he/she is a part of, respecting his/her rights and the spirit of the convention on the rights of the child.

2. Partners in the work of schools from the N 30+ network

In the work of each school, the regional center that is a member of the N 30+, participate all factors which directly or indirectly influence the work of the school. Scheme 4 shows all partners in the work of the regional center school and their relations.

3. Focus of work in schools from the N 30+ network

It has been already said that N 30+ should achieve two main goals: further training for active teaching / learning; practical application of the active methods of teaching / learning, and the spirit of active school .

3.1. Training

Content of training includes knowledge of general active school principles, knowledge and skills about active teaching/ learning methods, knowledge of the conditions for their application. These contents are presented in the Manual.

As far as the way of training is concerned it is important to point out the following. First, training for active teaching / learning methods can be realized only with active participation of the participants and intensive interaction among the participants, the student and the training facilitator.

Active participation of the participants in training (teachers and others) is based on all their life and professional competencies, knowledge and skills.

The training is performed in various ways, see text *Various Types of Training for Implementation of the ALT Ideas* (seminar types).

3.2. Practical application of the principles of Active Learning/Teaching

This will be the fundamental function of N 30+. In another words, N 30+ should be an instrument for innovation of pedagogic work methods in our schools. Innovation consists of transforming our school from traditional to interactive and active. N 30+ should realize its role in the following way: all schools in that network will gradually become places where human potentials of our teachers are mobilized to perform modernization of pedagogic processes.

3.2.1. Projecting innovations

The first phase of work that every school from N 30+ will go through, is a production of as many new ideas as possible for performing the teaching in the sense of Active Learning/Teaching. Here we talk about a phase of teachers' work (and others that are involved in education) that is by its nature creative that should create general and concrete ideas for new methods of teaching. Of course, this creative process is based on all existing experiences and competencies. It is very important for schools from N 30+ to register or make an inventory of innovative forms of teaching that already exist in schools in a proper region. This means that every school from N 30+ should assemble all the teachers that already work in the spirit of active school on their own initiative, it should collect documentation and describe all the forms of this kind of teaching, all types of lessons, all forms of activating the students, that already represent the realization of this school in practice. These innovations are possible because the origins of these schools already exist, and the role of N 30+ is to support, widen and enrich them. So, the first task of N 30+ is collecting and the mobilization of practical experiences of innovations in teaching, that already exist, as well as analyzing these experiences.

The second task is encouraging the process of creation of new ideas for teaching in the spirit of Active Learning/Teaching principles, while applying the active methods of

teaching / learning. Specifically, schools from N 30+ will complete this work in the following fashion: teachers, professional associates and others - individually or in teams - will make series of projects for performing the teaching in innovative way.

The main purpose of these projects should be the production of as many as possible, various, original ideas for teaching in the sense of Active Learning/Teaching. So, in this phase of work we should not go to technical finishing, especially not in the form of formalized "preparation" for the lesson. Instead of that, we should create the atmosphere for free assertion and formalization of all ideas, no matter how strange some of them might seem. In this phase of work we should completely avoid the routine tendency to think always (and only) about the ideas for realization of a single lesson, simply because you can not always have a new idea for each separate lesson. Instead of that we should have in mind larger blocks of curriculum that are by their nature homogeneous.

The participants in the *Active Learning Project* can find a rich source of the ideas for work throughout the entire *Manual*, and especially in the section *B1. Creation of the ALT lessons*. The exchange between the participants (directly, through publications, video-tapes, internet sites, at different conferences), is an infinite source of ideas for the ALT lessons.

The second phase in creating innovations is discussion about ideas presented in the project. All interested parties, from school - regional center and other schools in the region should take part in the discussion. The main goal of this discussion is a constructive and co-operative analyses of the presented ideas, so that the basic notion of the author becomes clearer, more precise, operational, coherent (i.e. consistently developed) and in accordance with the spirit of Active Learning/Teaching. In the process of considering the ideas that are in the project, facilitators and a professional team from the Institute for Psychology will be included.

After the phase of project discussion, we proceed to the phase of the finalizing of ideas, their operationalization and transformation into certain organizational forms, such as: one lesson, two lessons, three lessons, a block of lessons, a joint lesson in several academic subjects, teaching outside of the school building (in the nature or some cultural institution, etc.), participation of a guest in the lesson, lessons performed by students, field research, laboratory exercises, library research, etc.

3.2.2. Performing the new methods of teaching

Innovational methods of teaching are performed according to the ideas from the project and its operationalization. For further development of these innovational ideas it is important to have rich register of the things that were performed, in order to create possibilities for later analyses, further development of these ideas and their correction and elaboration in the form of work product of N 30+.

3.2.3. Analyzing performed teaching

The main purpose of this analysis is to get a clear insight to:

- how much is the spirit of Active Learning/Teaching truly present;
- can we realize proclaimed goals of Active Learning/Teaching by this teaching;
- does this teaching have advantages compared to traditional teaching; and very precise naming of these possible advantages.

In this analysis participate all the personnel in the school - regional center engaged in the project "Active Learning/Teaching", and all others from that school who demonstrated interest for the work, other schools in the region, representatives from the Ministry of Education (especially supervisors / inspectors), facilitators, and in certain phases of work, the professional team from the Institute for Psychology. Most important are the following things:

- to create an atmosphere of tolerant and constructive analysis of the active lessons;
- a comprehension that an external judge that provides a verdict on the good active teaching / learning is not present, but we come to that recognition by mutual and co-operative analysis;
- that this problem solving on the good active teaching / learning practices, is the best way of education for the active school;

- that the key roles in this whole process are played by teachers that are specialists for certain teaching areas;
- that the final goal of this analysis and mutual learning is to train every teacher for self-analysis, the ability to evaluate himself/herself to what extent he/she brought the students into the position of active participants in the process of learning.

The analysis of the active lessons is done according to the following parameters:

- creation of the project for practical application (how to make the project, mutual analysis of the project);
- practical realization of the project in school (performing the instruction planned by the project, video / audio note or written protocol about performed teaching);
- analyses of the active lessons:
- analysis of the central idea;
- analysis of the curriculum creation and mobilizing existing knowledge and experience of the students;
- analysis of the motivational means;
- analysis of the teacher's role;
- analysis of the role and activity of students (balanced workload for students, types and duration of an activity, how many students take part in what activities, variety of activities, roles and changing roles that students play, analysis of the exchange among them);
- analysis of the type and number of decisions that students made during teaching;
- analysis of the relation between teaching contents and teaching / learning methods;
- analysis of available and usable didactic means and local educational resources;
- analysis of economy and reasoning of the performed teaching (the rationale of using certain teaching / learning methods, time spent and material used, etc.);
- analysis of the possible value system and evaluation of the student activity and the effects of performed teaching;
- analysis of the conditions for realizing Active Learning/Teaching in school - regional center and other schools in the region (resistance, problems, favorable conditions and possibilities).

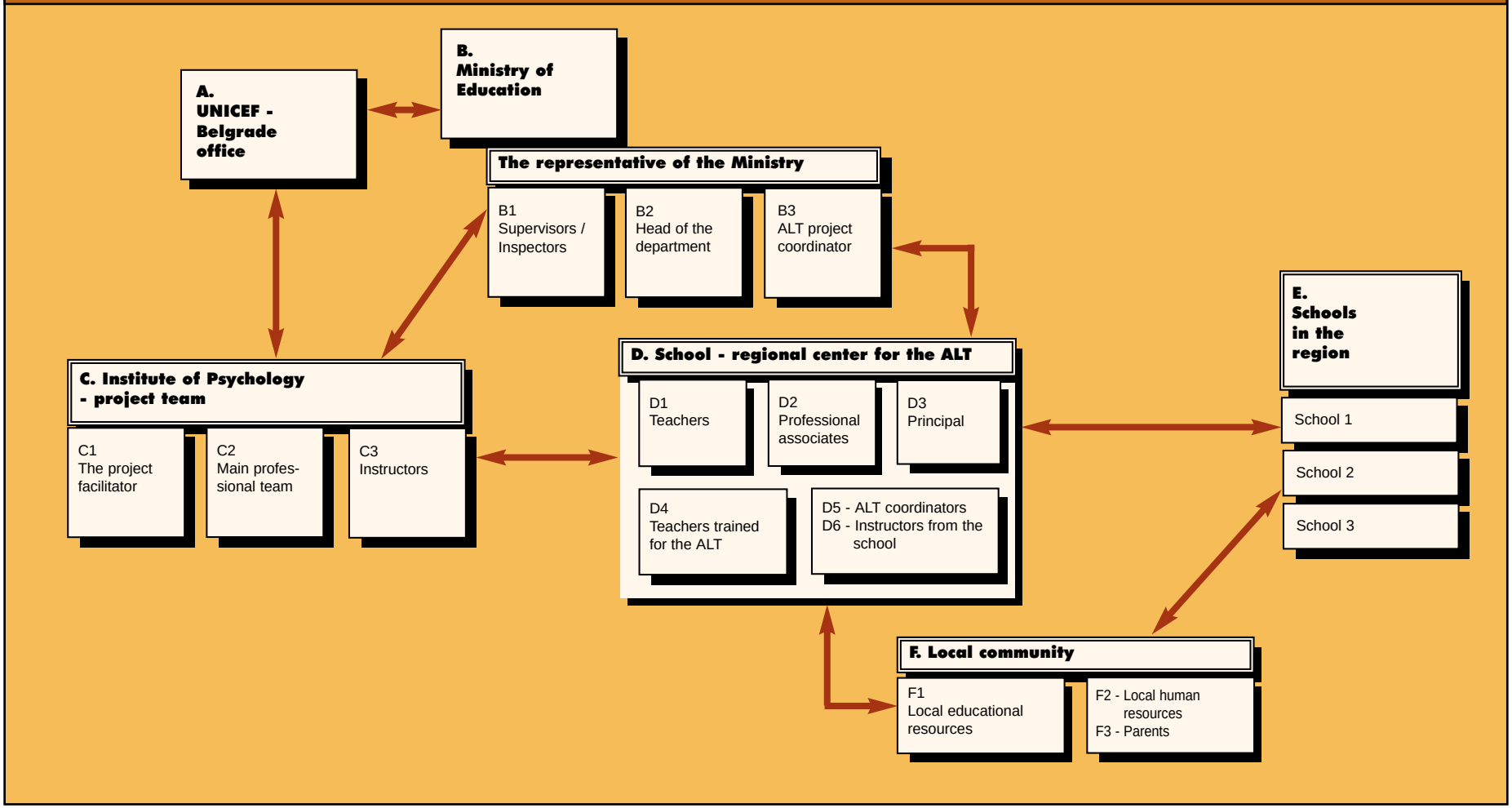
As an aid in performing analyses the text *Outline for analyzing activity and roles of the children in active learning* and Appendix 10: *Remainder for analyzing scenario or performed teaching (How did we solve it?)* is used.

4. Enabling schools from the N30+ network for performing their role

The enabling of school includes the series of well thought out measures:

- Enabling the personnel (it is necessary for the large number of teachers from the network to complete various types of training, so that the "critical mass" would be created);
- Equipping the schools from the N30+ network with the basic equipment (video equipment, photocopier, lab equipment, sports equipment), which is necessary for the work and providing the help to other schools in the region, as well as the carrying out the activities within the ALT project;
- Providing the systemic support to those schools and teachers working in the spirit of the ALT (support from the Ministry of Education, support from inspectors/supervisors, allowing for more flexible organization of instruction, including the time spent working on the project as a regular working hours, etc.)

Scheme 4. Organization of the work of school - regional center for active learning within the N30+



B1. CREATION OF THE ALT LESSONS

SCENARIO PRODUCTION FOR THE IMPLEMENTATION OF THE ALT LESSONS

The basic ALT seminar is finished by the making of a scenario outline for innovative, active forms of instruction. Here, the first attempts are being made to proceed from the active school idea to the main task of actual application of that idea, in authentic conditions of school functioning, and in which our teachers work, and our children learn.

When we seriously consider this stage of the ALT project, it can clearly be seen that we deal with the *projecting (planning) of innovation at the micro-level* (i.e. projecting of innovations carried out by the teachers, individually or in teams, in a particular school, and for certain curriculum parts from the specific academic subjects).

There are three major obstacles causing problems at this stage of the project:

a) in our educational system, neither a tradition of serious innovations planning exists, nor the respective training;
b) the position of our teachers is such that neither they are asked, nor expected to autonomously plan innovations in their work;
c) the existing system of creation of written lesson preparations (usually done according to the model) is a great obstacle for teacher to recognize the importance of this phase in the educational process.

Due to the above mentioned, the *Active Learning Project* invests an extra effort to encourage participants to start thinking how to perform the planning in all activities after the basic seminar as successful as possible.

It is necessary to draw the attention to additional key problem. It is often said that teaching is a creative profession. That is to a large extent true. If we are being more precise in determining what makes teaching a creative profession, than *the creativity of teachers can be located exactly in this phase of projecting (planning) of innovations in the manner of instruction performance.*

According to this way of thinking we arrive at the key definition of the significance of original scenarios creation for performing the innovative ALT lessons.

The scenario creation for the ALT lessons is the key part in realization of the project, it is a link between the active learning/teaching ideas and the active learning/teaching practice, between the theory and the practice.

Thus, at this stage of the project a transition is made from the ideas and the principles of active school to their operationalization, a transition from the general active learning training to the application of those principles in a particular and very specific context of instructional implementation. This means that in such an actual implementation of the general active learning ideas, the specific conditions must be taken into consideration:

a) the specific educational goals for a particular academic subject (and for certain blocks of material within that subject);
b) the specific nature of the instructional material of a certain academic subject (and determination of those particular parts of the subject);
c) the specific choice of the teaching/learning methods which are in accordance with the nature of instructional materials that are studied;
d) the special characteristics of the groups of students that are learning (their motivation for learning, abilities, previous knowledge, life experiences connected to the studied materials, knowledge of other academic subjects, their preferences, possible resistance to learning of a particular material, etc.);
e) the actual conditions in which the learning process takes place (in school - out of school, in the nature, in the lab, the available local resources and equipment, etc.);
f) the specific ideas of a teacher, or a team of teachers on how to perform an instruction through learning of a certain material in the planned imaginary conditions (i.e. in a certain instructional situation).

Bearing in mind that it has been previously demonstrated that the inertia of producing a modeled written lesson preparations represents a great obstacle for recognizing the importance of this stage in changing the way of thinking and practice of creating innovative lessons, in the following table we have concisely expressed the differences between the existing written lesson preparation and the *scenario for the ALT lessons.*

Table 4: Difference for the written lesson preparation and a scenario for the ALT instruction

CLASSICAL WRITTEN LESSON PREPARATION:	THE ALT SCENARIO:
1. Planned implementation of a **single lesson in 45 minutes.**	The implementation of a single lesson is planned, but also the **shorter** (than the lesson) **or longer** (two lessons, block of lessons, circle of numerous lessons) units can be implemented.
2. Specifying **what the teacher is doing**, the ways of implementing the lesson.	The accent is placed on **what the students are doing**, the instructional situations are being specified (to provoke different activities relevant for that academic subject) and students' activities (initiated in that situation).
3. Specifying **the contents** (WHAT is being done, the schedule of materials to be covered within the time scale, and mentioning the teaching methods and didactic aids to be used.)	Domination of **HOW to initiate** certain student activities and **WHICH activities** will be initiated, a pedagogic interaction among the students, and between the teacher and the students. This means that the accent is on the methods of instruction through learning, the learning specific for that subject (material).
4. The focus is on **implementation**, realization of the lesson.	The focus is on **preparation** before the lesson, designing the instructional idea, which will achieve certain goals the best (duration of the preparation is longer than the lesson implementation itself - from having an idea to creating the instructional situation).
5. The written preparation **has almost an uniform structure**: introduction, the course, conclusion (danger of doing according to the model, mechanical copying of previous lesson preparations - one's own and somebody else's)	**The fixed, uniform structure can not exist** (it doesn't mean that it shouldn't contain some basic information about the instructional material, goals, age of students, etc.), but quite different structures of scenario depending on the author's idea. This characteristic stems from the fact that the same material can be learned in different ways.
6. Domination of the **teacher's lecturing role**, and partly organizing.	Domination of **organizational** (film director, designer), **motivational** role of the teacher, the role of **teacher as a partner in pedagogic interaction**.

As it can be observed, the differences are more than clear enough and significantly large to justify the usage of the expression "scenario" (to point out the differences). It is important to emphasize that these differences are *not of technical nature*, but an essence of different understanding of the nature of teaching/learning process can be practically seen.

In short, at its basis the creation of *the written lesson preparation* can operationalize (and materialize!) the concept of school knowledge with *the emphasis on the curricula* (deliverance of those curricula, while noticeably neglecting the learning process and its results) and *the emphasis on teacher roles*, i.e. *the process of tutoring* (with, again, noticeably neglecting the planning of the student learning process).

At the basis of production of *the ALT scenarios*, the concept of school work is operationalized (and materialized!) in which *the emphasis is on the process of learning* in the

pedagogically precisely defined conditions (definition of the instructional situation, definition of the roles and the activities of students in the process of learning), and on *the results of the learning process* (because in the course of learning activity, the teacher continuously receives the information about the student work, possible difficulties, their advancing , etc.)[12].

[12] In order to better understand the differences between these two concepts of the nature of school learning, wee section: Characteristics of the active learning project

Therefore, let's repeat once again. The process of scenario production for the ALT lessons is the key stage in translating the active learning idea into the educational practice. Particularly, through the ALT scenario, the framework of the ALT practice can be recognized, in which the teacher's roles are changing (see: *Inventory of Teacher Roles, and Profession Development of Teachers and the Active Learning*) - and especially - the conditions are created for the process of student learning to be in focus of school work (including all the resistance because of the previous limited experiences and all difficulties in learning the new material, but also all of the positive student efforts to assimilate and create new knowledge). Simply, the school should play a role which justifies its very existence, to emphasize what should be emphasized: *the process of student learning in pedagogic (instructional) situations*, which are meaningfully created and defined by the school (as an institution) and a teacher as the key partner (but not reduced to the role of a lecturer!).

The first problems encountered in the creation of the outline are how to come up with the idea for planning the active teaching/learning. Instead of a detailed formula, a few stimulants are offered:

- The teacher should try to break away from the routine of making a so called written lesson preparation, which became so formalized, that can represent an obstacle in the free production of new ideas;
- The initial idea, project outline, shouldn't be linked to a single lesson: it could be planned for the material covered in a single lesson, but also for bigger blocks of material homogenous by its nature, or just for the part of the lesson;
- It would be fruitful if a groups of teachers or professional associates would work as a team at this stage (a layperson could come up with an interesting general idea for a school subject);
- It would be very good if sometimes the students were asked to express how they would like to, or according to their opinion how should a certain material be covered, as well as in making the initial outline, it would be beneficial to incorporate children's reactions to a certain material from previous years;
- Each teacher can individually or in a team try out the technique of brainstorming, i.e. the free, uncensored expression of ideas (see *Market of the Ideas for Active Teaching/Learning*) - and above all, one shouldn't be afraid of the new ideas, no mater how meaningless or strange they seem at the beginning;
- Each teacher can observe his/her own instructional practice, and see which his/her classes resemble active learning the most, and thus arrive at the new idea (if possible, it would be good for the teacher to record some of his/her lessons on the video tape - we are certain that this could be more valuable than participating in several seminars);
- Taking another look around, i.e. around the school, could provide an idea how to use the environment (local educational resources) for the innovation of instruction: a meadow, museum, cultural site, geographical distinctiveness etc.;
- Maybe we could come up with an idea when we observe the others in presentation of information (as the instruction often does), for example on the TV, in some other media or different kinds of propaganda, marketing experience, how it is done in some modern books (not the textbooks), newspapers, journals, etc.

This *Manual* offers very *rich incentives* for the practical application of the ALT ideas in instruction. This is accomplished not only by theoretical concepts but also through sections of the Manual which distinctly stimulate the creativity of teachers and help them arrive at the ideas to be incorporated into the scenario (while at the same time do not limit the teachers, do not offer ready formulas): *Methods of teaching/learning, Inventory of the teacher roles, Market of ideas for implementing active instruction, Learning through projects, Educational workshop as a form of active learning/teaching, Examples of educational workshops.*

The additional mechanism for stimulating teacher creativity in the production of a scenario is experience exchange among the participants of the ALT project: the exchange within the teams of teachers, the exchange between the teachers of a particular academic subject, the exchange via published scenario collections, the exchange via video tapes with the recorded ALT lessons, the exchange at the seminars and conferences of the project participants, the exchange between the N30+ schools (via computer equipment used by schools - regional centers), the exchange through the project web-pages, etc.

It would be desirable if the production of the ALT scenarios occurred in two stages, logically following one another and gradually becoming a whole.

The first stage is *the production of an initial outline* for the ALT lessons. The production of an initial outline is naturally the first step in all teacher activities following the basic seminar. The initial outline is different from the real scenario in the degree of development. Namely, the initial outline contains first ideas about how the ALT lessons should look for a certain material. This initial idea (of a teacher, group of teachers, or teachers and professional associates - facilitators) serves as a starting basis for the discussion and development gradually leading to a written scenario for the ALT lessons.

The developed scenario for the ALT lessons is in fact, a polished and finalized version of the initial outline. In the first version of the developed scenario (to be used as the basis for the critical constructive analysis performed by the project participants) the basic parameters of the planned instruction are already clearly defined:

a) motivational methods to be used
b) the type and the amount of the material to be covered
c) to goals to be accomplished
d) methods of teaching/learning to be applied
e) the part of the instruction (one lesson, less than a lesson, more than a single lesson) planned as active teaching/learning
f) the basic idea of the instructional situation which binds the goals, the nature of the material, and the methods of teaching/learning guaranteeing the involvement of a great number (the aim is all) of the students in relevant activities leading to accomplishment of the educational effects.

Besides theses general rules of the ALT scenario production, *the main way to help the teachers* are different activities following the basic seminar. One extremely important (according to significance and the time devoted for it) segment of the activities after the basic seminar is allocated for the scenario production (production of the initial outline, - production of a scenario - team analysis and correction and elaboration of the scenario among all participants of the ALT project). These post-basic activities represent *the most efficient way of actual teacher training, because they occur in their environment, in the specific conditions in which teachers work.*

Teams, applying the constructive critical analysis, according to a procedure that had been standardized and tested over the years, analyze the initial outline and a scenario. This procedure has been described in detail in the section: *Scenario for the scenario analysis for the ALT lessons.*

- I FELT LIKE A LIGHT BULB LIT BY THIS SEMINAR.

Statement of one seminar participant

MARKET OF IDEAS FOR ACTIVE TEACHING/LEARNING

This section is intended to present concrete ideas about what active teaching/learning could be in class. The preceding chapters dealt with active teaching/learning in indirect and somewhat more general terms. This chapter should help ideas come to life.

This chapter is meant to be an actual market of ideas, i.e., an exposition of the offer in ideas which a reader may go through and accept or not, which a reader can further develop in keeping with his/her needs, and to which a reader can add some of his/her own, new and different solutions.

The ideas that are presented here were arrived at in different ways. Some are directly based on some other chapters in this *Manual*. Some have been taken out of other publications (not only those dealing with psychology and pedagogy). Some were born while the authors were working on the *Manual* or during seminars. Many of the ideas came from students at our seminars, during various activities at those seminars. In most of the cases there is no record of who came up with an idea or what it was like in the original form.

The ideas have intentionally been left not fully formulated. Just as well, some ideas have intentionally been given in greater detail, while others have been left in the form of a hint, an indication. Our intention has been to fully be in line with the spirit of the active school, which does not provide ready-made formulas for how to organize active teaching/learning. This chapter will have served its full purpose if it provides a series of incentives for new ideas about how and in what different ways can active teaching/learning be conceived and organized. This market of ideas will, therefore, have justified its name if everyone who sees what it has to offer adds his/her own concrete solutions and new ideas to that offer. An exchange of ideas on the "market of ideas" should help teachers who engage in practical work devise concrete methods of teaching/learning adapted to the specific conditions in which they work.

Here, the focal idea is to engage students in meaningful activities adequate for the nature of the material they need to learn.

What follows is an initial store window of ideas for active teaching/learning.

1. Urban plans and artistic designs for a city of the future

This is an activity for an art class. The students are given imagined conditions: in the future, urban centers will have to be built under the water. The students are asked to use water colors , and paint how cities will look like, paying attention to how they will paint the water (its color, the reflection of the light...). The assignment is for them creatively to represent in the water color technique a city and its buildings (how city blocks, modernly designed buildings, and other city elements look...). By doing the assignment in Art, students unavoidably perform creative art activities: they develop their vision of the cities of the future and their individual elements, they solve the problem of colors, etc. At the same time, however, they must bear in mind and resolve various other problems linked to the organization of a city under the water (How would people look like knowing that they cannot breath under the water? Do they have pets and which kind? What are parks like?). The teacher discretely guides the students and when asked to, discusses their ideas with them.

2. Independent comprehension of a sentence as a concept

The purpose of this form of work is for students to understand independently and fully what a sentence is, instead of repeating a definition which they often do not even understand.

Slips of paper with the following sets of words written on them are passed out to the students (or the words are written on the blackboard):

a) A pretty girl skillfully skips the rope;

b) Blue good window tree write;

c) A kairy grud tlowly druts the bucy

The students are next given a series of assignments (one by one): Compare the three strings of words? In what ways are they similar and in what different (and this in pairs: first and second, second and third, first and third)? What do a), b) and c) tell us? Which set makes the most sense and which the least, and why? Which sets are correct sentences and which are not and why? If you are to divide them into two groups, which two sets should go together and which should go separately and why? Compare sets a) and c): to which part of set a) corresponds the part of set c) which reads "A kairy grud" and why? The textbook definition of the sentence should be written on the board and the students should be asked to determine which of the given three sets of words meet the requirements given in the definition and which do not and why? In order to make the children think about what a sentence is, similar assignments are given: for them to make a sentence out of a set of words which have a meaning, to put meaningless words in a set in such a way as to get the structure of a sentence (such as the given set c)), etc.

In the course of the work, it is absolutely necessary to create the right atmosphere for the children to express their views freely, regardless of what they are, as this is the only way to learn how they think. It would prove very productive to organize a discussion (for instance, among the children who say that set c) is a sentence and those who say that it is not). There is a very good chance that children will themselves grasp what a sentence is through provocative assignments of this kind, which children solve independently.

3. Independent use of mathematical formulas

The children who know what an are, as a surface measure, is and who have learned how to calculate the area of geometric figures are given, as a field assignment, to mark the surface of an are in area in the shape of a circle, a right triangle, and a rhomb. The children are left to work completely independently. If field work is not possible, children should be asked to do the same on a piece of paper on a certain scale.

4. Semantic comparison of two concepts

When learning new concepts or after learning a set of concepts, the students face the task of comparing two or more concepts in terms of their semantic features or markers (these are smaller units of knowledge which, when combined, give more complex meanings). The teacher gives the concepts which are to be compared, writes a list of semantic features, allows students to use the textbook and other sources of information, and lets them work independently, either individually or in small groups.

For instance, a biology teacher asks that the students to compare the following concepts: "mammal," "chimpanzee," "insect" and "algae". The list of semantic features can be the following: "performs photosynthesis," "reproduces," "feeds," "has cells," "independently moves" "breathes," "has a nervous system," "has a spine," "uses speech," "dies," "grows," "has an intelligence," "digests food," etc. When making the list, the teacher will best know how to choose the semantic features which students are not sure about. Students mark the presence or absence of a semantic feature by using plus or minus (+, -). It is best if they make a table. The next steps are the comparing of the concepts, the making of definitions out of the relevant semantic features, the writing of shorter texts, etc.

This type of comparison of two or more concepts can be used in all school subjects. For instance, it is possible to compare a ballad and a romance in Literature, slavery, feudalism and capitalism in History, etc.

5. Ideas for topics, events, concepts with several interpretations

Groups or pairs receive several different quotations from the textbook, or other sources connected to the subject. Their assignment is to organize quotations on a paper or poster, with the relationships among them added or drawn: the same, dif-

ferent, including the previous example, they are grouped, connected with lines, transformed into a diagram, connected with arrows... Finally, based on all quotations, students come up with their own definition.

6. Making a logical scheme of concept classification

In order for the acquired individual knowledge not to remain isolated, but integrated into a system of concepts and knowledge, it is necessary to have a continuous process of fitting individual knowledge and concepts into general logical schemes that represent the structure of the concepts.

The taxonomic classification of plants and animals can serve as an illustration. For instance, the basic scheme should represent the mutual relationship between concepts of a different degree of generality: from the concept "living being," to "animal," to the general categories such as "invertebrates --vertebrates," to the specific such as "mammals," to the particular kinds of mammals. It is of the utmost importance that the students actively participate in the making of the schemes (whole or partial) and that they make a connection between what they are learning about each individual species and the general scheme of the classification of animals, meaning that they constantly think from "up," the general, "down," to the particular and vice versa and give explanations for the criteria used in the classification. It is up to the teacher to decide between an integral and a partial classification (a connection is subsequently made between the partial classification and the general), to work out the initial skeleton of the scheme and then to urge the students that every time they learn something new they specify its place in the whole of knowledge (i.e. on the logical scheme).

It is obvious that such thorough work on developing a system of knowledge -- in the place of its existing division, as a consequence of which individual lessons are hard to understand and are quickly forgotten -- can be applied in all school subjects.

7. Logic of natural laws

Similarly, to the previous example, a graphic representation is an aid, means for making the independent search for the cause of some event easier. For instance, children are told the final effect of an event (why are pandas becoming extinct). Starting from this, children search for the causes: firstly direct, then indirect, and then the causes of the third level of distance from the final effect.

A version of this is by using graphic representation, children assume the consequences of a certain phenomenon. First they search for the direct consequences, then the indirect, and so on. For example, in History: the influence of some event on future occurrences; in Literature: diversification of literary styles; in Sciences: influences of the new inventions.

8. Graphic representation of historical time axis

One of the problems in teaching History is to get students to understand the concept "historical time." The making of an axis, of a line of the historical time is one of the ways of helping students better understand what the historical time is. A long horizontal line (several meters long) can be drawn to represent the course of the historical time. The B.C. and A.D. eras are marked first. Centuries are marked with vertical cross-lines (each line stands for a hundred years). The entering of other data in this graphic representation of the historical time is left up to the children. To be precise, the years of all major historical events, the names of historical figures (their pictures can be put next to the names), pictures of important monuments from each epoch (buildings, works of art, inventions, etc.), pictures of typical representatives of the epoch, of predominating implements, weapons, clothes, etc. are added to the chart as the studying of history progresses.

Just as well, for every new lesson, students are asked to locate the historical events on the chart, to say what is characteristic of the period, etc. The students are continually stimulated to collect photos, reproductions, etc. that they think should be added to the chart. When the chart has mostly been filled, the students are urged to make synchronic comparisons, meaning comparisons of events in a specified historical period or during an important historical events, or to make diachronic com-

parisons, for instance, of changes in the clothes, weapons, etc. over a shorter or longer period.

The general chart of the historical time (axis of the historical time) can be filled in as an illustration of a general course of history or as a specialized historical map, for instance, an illustration of the military history or of the cultural history, or an illustration of the development of implements and weapons, etc. Students can be stimulated to make their own historical charts.

Greatest hopes as to the students making progress in the understanding of the course of time in history should be placed in their personal engagement in filling in the chart of the historical axis and in the cumulative impact of their personal engagement, i.e., in always making a connection between new knowledge of history and the basic chart the students daily have before them.

As far as the technical side goes, the chart can be drawn on a classroom wall and illustrations can be put on or taken off. The chart can also be drawn on paper, which can be extended by pasting on new sheets, or on a strip of cloth.

9. Reciprocal Learning

This is a technique of learning "students from students," with the teacher providing a discrete guidance. The students are divided into groups of five to six and each member of a group is in charge of a part of the group work. The assignment of each group is to study a lesson (a press article, to see a TV program, or video, etc.). The duty of the group facilitator is to steer a discussion on what has been read or seen by asking questions or insisting that questions be asked about what has been learned; what needs to be clarified; what the link is between what has been learned and the earlier acquired related knowledge, and by briefly summarizing what has been learned. This is, therefore, a technique of facilitating a process of understanding. The alternating of all group members in the role of the group facilitator is a good way of avoiding the shirking of work and making sure that everyone is active.

10. Knowledge jigsaw

This is a "students for students" type of learning which activates the students in the greatest possible measure. Basically this type of work unfolds in small working groups, although it is also possible to assign individual roles. The essence of the "jigsaw" is that each working group or individual makes a specific contribution, and then the separate contributions are exchanged and combined.

This form of work is based on the idea that the children in a class have different personal experiences, knowledge and capabilities and that activation of those different experiences and their exchange can diversify the knowledge of all members of the class.

Two forms of the "jigsaw" are possible. One is based on the mobilization of the knowledge already possessed by the children, its exchange and systematization. An example can be a class about wild animals, when the teacher does not deliver a lecture (from the curriculum for Second Grade) but divides the children into as many groups as there are animals to be covered and asks every group to write down on pieces of paper everything they know about the particular animal (how it looks, where it lives, how it gets its food, etc.) The next step is the exchange of the knowledge among the groups, its systematization, etc. Another form of the "jigsaw" is to divide a new lesson into separate topics and have each group study one topic (using textbooks, doing research in a library, using clippings, etc.), after which each group presents a report, the reports are discussed and a synthesis and summary produced through a joint effort.

11. Brainstorming

This is a technique of freely producing words and ideas. An atmosphere is created in a group for an absolutely free and uncensored association of words and presentation of ideas, no matter how they may seem at first -- foolish, absurd, unusual, or publicly unacceptable.

This form of work in class can be used as an introduction to some higher forms of structured activities, as a kind of an "ice breaking" activity. E.g., when starting a lesson on the Inquisition or on gravitation, the teacher gives a minute or two for a free association on the subject, guaranteeing full freedom. In addition to "breaking ice," such a production of associated meanings can tell the teacher what other concepts the children associate with the key concept in the new lesson and in that way provide him/her with a key to getting other concepts across.

Another important use of brainstorming is the production of new and unusual ideas -- suggestions about how a problem is to be solved. Brainstorming is of course only the initial stage of formulating proposals for a solution of a problem. It is followed by a logical analysis, a selection of the presented solutions, the choosing of viable solutions, etc. Naturally, all the subsequent activities and the choice of solutions should be performed by the children. Some of them will be better in the first phase of producing a great number of diverse ideas, and some in the second phase of a strict logical analysis and the translation of ideas into practice, meaning that children of a different mental make-up get a chance to express themselves.

12. Asking Questions

A typical situation at school is when teachers ask students questions, most often questions of a reproductive type, and students answer the questions by repeating what they have already been "served." It would be very stimulating to periodically switch the classic roles at school, i.e., to set aside time when students can (but truly freely and without "faking") ask the teacher questions about anything they like. From time to time, students can be asked themselves to formulate the questions for a test, or they can be given a text and asked to sum it up by asking three key questions to which the text provides (or should provide) answers, etc. The asking of meaningful questions will always be a better indicator of how a text is understood than its sheer reproduction. Moreover, this is a practice for the students in a fundamental cognitive activity: the grasping of a problem and the formulating of a question in an articulate way, as conditions for solving a problem.

13. Pro et Con

This is a universal technique for activating the students. The students are simply divided into a group which advocates and defends something and a group which criticizes and rejects that same thing. The students can be allowed to split into the two groups according to their personal inclinations, or the teacher, himself, can decide who is in the PRO group and who in the CON, regardless of the students' inclinations (both methods are often equally effective). It is absolutely a must to give the students time to prepare, gather information, think of arguments, organize their presentation, etc. before a discussion opens.

The basic requirements in a confrontation of pros and cons are for the discussion to be based on the knowledge of the academic subject matter (and not on off-hand improvisations), for arguments to be at the core of the confrontation, for the views presented by the other side to be respected. The teacher or a group of students who are not participating in the discussion can act as an arbiter who makes sure that the discussion is conducted in a correct manner.

The discussion can be in the form of a confrontation of views on some issue, of the defense and criticism of a particular kind of behavior, it can be about two different solutions to a problem, about a proposal, in the form of a defense and criticism of a personality (living, historical or a character in literature), about an epoch in history or a historical event, etc.

This form of organized learning during school is very dynamic, since individual students or a group of students rally round a certain viewpoint and gradually increasingly identify with it, so that it gets a personal aspect. It is very useful to switch the roles at a certain point (for instance, when both sides exhaust their arguments). It is also possible to form a third group which tries to produce a synthesis of the pros and cons or to make a compromise between the two. Through such engagement, students no doubt develop varied activities: they study a material, independently collect facts and arguments, practically learn how to pursue an argumented dialogue, must carefully listen to the opposing side in order to be able to come up with the best arguments, try to understand a contrary stand-

point (especially if the roles are switched), try their hand at synthesizing, and in so doing learn through personal engagement (and participation!).

14. Trial of a historical figure

This is a variant of the *pro et contra* technique. The basic goal is to activate students to develop a personal view of a historical figure, a historical event, literary school, scientific theory or idea, etc., by practically testing his/her skills of criticizing and defending a certain view in an argumented fashion.

The basic thing to do, if one is to avoid a sheer improvisation, is for the teacher to provide selected and relevant sources of information, for the students to study them, make excerpts, synthesize arguments in support of a certain view or against it, and then, without much interference from the teacher, practically to test their capabilities of engaging in a discussion using arguments and the knowledge of basic facts. A student jury can be set up to steer the discussion and judge the strength of the presented arguments. It is recommended to sum up the different positions on the discussed idea in the end and to try and arrive at a final judgment.

15. Logic behind the course of history

Children receive (individually or in pairs), the first and the last step, or an event, or a description of a situation. Afterwards, the steps between the first and the last one they individually reconstruct, or they might receive them already prepared, and their task is to put them in order according to the logic of time course. The solutions are compared in small groups.

16. Role of a TV critic

A TV program important for the attainment of an educational-pedagogic objective is selected for being conducive to the understanding of a part of the curriculum or for being important for the building of a system of values and views of the students. If possible, the program is video-taped, so that some parts can be seen over again. The students are asked to make each one individually an outline of a critical analysis of the seen program. There follows a discussion on the presented views, which are then combined into a whole (naturally, a possibility is left open for alternative views on the same problem).

17. Making advertisements and posters

The skill of effectively getting messages across to the public is of immense importance in modern society (economy, social activities, public activities). It would be good if the students would frequently have a chance to try their hand at these skills, especially with modern visual media (posters, bills, video-spots) which can have a strong impact on the recipient of the message. E.g., the students can be asked to make an advertising bill for their town as a tourism centre, to make an attractive poster about a particular historical period or a personality from an earlier lesson, to make posters with slogans and messages about why young people should read classic literary works, etc.

18. Guided creation of a joint text

A group of students or individual students can be given as an assignment to present the latest lesson in the form of a text, or an illustrated text, for a specific group of readers (for children of their own age, for people lacking systemic education, a text about domestic issues intended for foreigners, etc.). The students individually make the first versions of the text, after which the different versions are analyzed in a group, or by the author and the teacher together, primarily from the standpoint of whether a text is suitable for the readers for whom it is intended (Do you think the readers will understand it? How can we change the text so that they will better understand it? Did you put it in your own words? Which important facts have been left out? What is the main idea of the paragraph? Will the readers be interested in reading this kind of a text? How can we draw their greater attention? etc.)

If nothing else, this form of work implies an active relationship to the material and learning with an understanding. It can also prove an incentive for the skill of communication and mutual understanding.

19. Script writing

The students are engaged in the complex activities of writing a script for a short video or film story proceeding from a given text. For instance, script writing for a video film based on a short story, news story or a poem. This activity necessitates an in-depth analysis of the given text, the complex task of visualizing the scenes, which the text is to be translated into, while, at the same time, preserving the basic meaning, the job of creating something new in a different medium, all of which presupposes major imaginative and creative activities.

This form of work is the right solution for prompting students to undertake artistic and esthetic activities (especially in the upper grades, while partial scripts are possible in the case of younger students). When organizing active teaching/learning in art subjects, there is a danger that the accomplished activity of the students will not reflect the nature of the subject. In script writing, it is indispensable to have analyses of the given text, to understand the basic artistic messages, to transpose those messages to a different medium and to engage the creative and imaginative faculties of the students, meaning to stimulate everything that should be stimulated when taking up art disciplines.

20. Dramatization of prose and verse

This form of active teaching/learning is similar to the preceding, since it consists of transforming one kind of a genre (medium) into another far more specific one (the defining of characters, creating of situations, making of episodes, etc.)

This form of work engages similar capabilities as the preceding one (script writing). In any case it keeps the students in the domain of artistic activities and, moreover, helps them to clearly distinguish the different literary genres.

It can be said that the turning of one kind of an artistic discipline, genre and style into another is the basic way of drawing students into artistic activities but not non-artistic ones. This form of work can consist of writing simple music based on a literary text, turning a piece of music or a literary work into a painting, turning lengthier art forms into shorter ones (for instance, an epic poem into a series of proverbs), turning prose into verse, tragic forms into humorous ones, etc.

21. "I am sad - which literary texts best express my feelings?"

In order to better understand texts in prose and verse which convey different human feelings, the students can be urged actively to look through a collection of texts (reader, books on the reading list, works by a particular author) in order to find works (poems, verses, excerpts) which, in their opinion, convey certain feelings in a most striking fashion. It is best to give the students the freedom individually or in groups to choose the feelings in literature that they wish to research. When literary passages are copied down on paper, students should be stimulated to make various analyses of the collected texts. It is possible to compare prose and verse, to analyze figures of speech and changes in style, the vocabulary, the literary genre and its relationship to human feelings (lyric-epic forms; ballad-romance; tragedy-comedy, etc.).

22. What would your character do?

Each child draws a card with the names from one or more covered literary works. The teacher assigns a situation from the everyday life. For example, "You and your character were walking down the street and had found a wallet with a large sum of money. What would your character do?" A task for each child is to imagine what his/her character would do in such situation, and to find evidence for character's behavior in the literary work itself.

23. Detective story

Each group of three, draws a set of three cards (every group member draws one) from different categories: place (library, sauna, park, castle…), things (lighter, stick, gun, newspapers…), and professions (butler, actress, firefighter…). The task for each group is to create a detective story from the obtained elements.

24. Analysis of a textbook text

The teacher asks the students to read a new text in the textbook. In order to prompt their active attitude toward the text, the teacher gives the students a series of assignments which they are to do each by himself/herself: they are to write down all the words they do not know and independently to devise a way of finding out their meanings; to write down sentences or paragraphs about a specific topic in the lesson; to single out the main ideas contained in the text (for instance, in the form of three or four key words); to suggest a more specific and to the point title for the text in the textbook; to write a summary of the text in twenty to thirty words; to establish with which other lesson in the same subject and which lessons in other subjects does the assigned text have something in common; the students are asked whether they have come across the topics dealt with in the assigned text anywhere else (where? and what was said about the topics?); they are asked whether the contents of the chapter is applicable in real life (where and how?); the students are asked to illustrate the text and make tables and charts if possible. Naturally, only some of these assignments can be given, and the choice will depend on what the teacher's objective is (to make a connection with another material, link it to actual experiences, etc.).

The teacher next organizes the presentation of the results of the individual work, organizes an exchange of views among the students, and takes every opportunity to emphasize the points to be learned.

25. Producing a part of textbook

This form of work is possible only in the upper grades. A good reason for it may be when students are critical of a textbook or a part of a textbook.

The students can be asked to make a better alternative textbook for not too large a set of lessons. The brainstorming technique (see item 11 of this chapter) can be used for the initial rough ideas about what needs to be done and how. Working groups for individual problems are set up then: to assemble and select the material which must be in the textbook, to logically organize it, to define the key concepts, to see to the structure of the text, the layout, the question of which elements of the didactic apparatus (questions and problems from the textbook, etc.) are to be included in the text, how to make the textbook understandable and attractive to the students, etc.

26. "Snakes and ladders!"

For an assigned topic (e.g. grammar rules) children design their own board for a social game such as "Snakes and ladders", or "Monopoly". Children can use the rules given by a teacher and written on the blackboard, or they can devise their own, bearing in mind the goal of the game : to learn the rules of grammar.

27. Library research

Many of our schools do not have libraries. But even when they do, libraries are only used to take out books from a reading list and sometimes for literary activities. School libraries are rarely used as small research laboratories. However, from the moment children learn how to read, libraries can become a place where the students are taught how to use various sources of information. Of course public libraries can also be used for this.

Instead of the teacher himself lecturing and leaving it up to the students only to learn the lesson, the teacher can come up with interesting assignments for individual students or groups of students and have them find different encyclopedias, dictionaries, popular science books, textbooks, etc. The assignment can be for the students to use these various sources of information to find specific data, different interpretations, interesting details, etc.; to put them together and make a short report; to make a bib-

liography of the used books and report to the class about it; to discuss the work done by the individual groups and to combine it into one. It is only in this way that children can learn while still young independently to use sources of information, to learn how to find, store, use, report and exchange information, to evaluate information, to present it in a condensed form, etc.

28. Data base search

Our schools are short of funds and few of them have personal computers. Nevertheless, children and young people should be taught how to use data bases, similar as in the previously described type of activity (research in a library), and to use them to do the same assignments. Elementary-school children in many countries surf on the Internet today. This will be a reality for our children, too. The described library research can prepare children for such a future, since the main activities are basically the same and there is only a difference in the technique of using information.

29. Personal data base

This form of activity has a wide application. The chief purpose is to teach children how independently to collect, store and then actively use data which is important for some school discipline and which they will be able to use in the long term during their education and even later in life.

It is important, very important, not to make children do this for every lesson but only for new concepts and phenomena.

For instance, from the first time they encounter the concept "living being," students can collect and keep stored in one place written sentences, clippings, illustrations, etc. relating to the concept. This secures a genuine, long-term development of the concept and a record of how a child has progressed from a more superficial and concrete understanding to a fuller and more abstract one. At the same time, the students learn in the process to take an active attitude toward a text they have read: a text is selected, copied or cut out, placed in a folder together with the other clippings relating to the same phenomenon, it is compared with them, parts which bring into question what was found in an earlier saved text are written down, the collected data are saved and used when needed.

Technically, this can be done in the form of a card catalog (in many countries cardboard boxes and cards of various sizes and colors can be bought and are extensively used by elementary school students), or by using folders. Of course this can now also be done with the help of computer files. Data bases can be kept not only by individual students, but also by whole classes or groups of students.

30. Clipping

Clipping is a term applied in the contemporary documentation to clippings (photocopies) relating to a single subject. It is a technique of an active relationship to data, which is systemically collected, classified, and analyzed for the purpose of subsequent use. The technique, expanded and adapted, must be widely used in teaching with an aim of developing the skills of collecting, storing and using information.

Students should be stimulated systemically to collect data about a specific subject from textbooks, other books, newspapers, audio cassettes, etc. (for instance, clippings about new genetic discoveries, a certain historical event, or a scientist; taped musical themes which express certain feelings or use specific musical means, etc.). The next step is to find the best suited technique of keeping the collected data (comparing and classifying, considering possibilities for practical use, linking of two sets of data, using the collected data to illustrate a lesson in a textbook, etc.).

31. Guest in class

This method of activating the class is often applied, but not always in a planned and specific fashion and with the desired objective being achieved.

The very presence of somebody else produces the initial motivation -- it sparks the curiosity of the students. This positive initial impulse must be used in such a way that all the advantages of the guest in the role of a teacher are exploited: to present a model of behavior in a personalized form (for instance, of an artist, inventor, active participant in a past or current event); to have the guest demonstrate a repertory of skills which are specific for the profession he/she represents or the role he/she acts; to show the specific products of the particular profession, which the guest brings with him; to prepare the students to ask the guest searching questions; to have a group of students do an interview with the guest; to decide about possible future cooperation between the school, a class or a group of students and the guest or the institution he/she represents.

32. Laboratory experiment

This form of instruction has for a long time been used for some natural sciences. However, not every laboratory experiment is really active teaching. For instance, if the teacher does the experiment and explains what he/she is doing, it will be lecturing combined with a bit of a demonstration. The following are the conditions to be met if a laboratory experiment is truly to be a form of Active Learning/Teaching:

a) the participation of individual students in an experiment must not end with a rote performance of some isolated operations;
b) the child (each child which is doing something in the experiment!) must understand from the beginning which problem is being solved by means of the experiment;
c) all children who participate in the experiment should understand the logic behind the sequence of operations in the experiment by means of which a problem is being solved (the teacher should at certain points explain what is being done and why it is necessary);
d) when the teacher defines the conditions of the work to be performed, the students should be left to work independently (even when the teacher sees that they are doing something wrong, he/she should let them go on and should discuss the mistake only once they have become aware that the applied procedure did not produce results);
e) everything i.e. done during an experiment should in the end be linked to the initial problem, discussed (children should be given the main say), summed up and possibly put down on paper as brief notes, which are to be passed out to the students.

33. Natural Science Center

This can be a complex project which combines different school subjects and stimulates highly diverse and rich formative activities.

A natural science centre can cover a smaller or large territory (birthplace, a mountain, lake, pond, specific forest, etc.). Assisted by the teachers of various subjects, the students can carry out, partially or in full, very complex and formatively important activities, such as: the studying of the chosen environment's biotype; the making of photos about it (possibly even a photo-wallpaper); the preparing of animal skeletons and preparing and stuffing of animal skins; the making of herbariums; the analyzing of health conditions in an environment, the degree of its pollution and the sources of the pollution; a discussion on issues of the protection of the human environment; the planning and carrying out of practical ecological activities; the mounting of exhibits about a specific human environment and life in it; the making of general and specific maps; the making of teaching aides to help persons not acquainted with a specific environment learn about it. This can lead to the creation of a smaller or larger natural science centre which specializes in the protection of the human environment. In small towns, such an activity on the part of students and the school can mark the beginning of an actual institution (natural science centre, botanical gardens, small natural science museum, centre for the study and protection of the local environment), which will serve a long-term educational and ecological purpose. Naturally, the project is sometimes possible only in parts.

34. Botanical expedition

Instead of excursions, which often do not have a clear objective, it is possible to organize botanical expeditions with the clear objective of actively getting to know various types

of plants or biotypes, ecological niches, or living communities. In order to achieve this, a right season of the year should be chosen and a good plan of the expedition made. A plan implies: the general purpose of the expedition; specific assignments for working groups of students or individual students; a minimum of instruments; the selecting of the kind of notes that must be made (and appendices: photos, collected plants or parts of plants, samples of the soil, etc.).

Once preparations are made, it is of absolute importance that the students be given full freedom and independence so that they will truly have an experience of field researchers. Their independence is a must even if it means that the expedition will fail (from the standpoint of the teacher's plan), because i.e. part of the experience of research. Such an expedition is an opportunity for students to learn through personal experience some techniques of observation, the collection of materials in the field, conservation of the collected materials, and also to learn something about concrete living communities of plants, about the connection between ecological conditions and plants, etc.

After an expedition, the children must be engaged in other important activities, such as to write a report on their observations; to prepare the collected materials, conserve and analyze them; to compare what has been collected with the corresponding lesson in the textbook; to consider ecological problems; to organize a discussion on possible practical ecological activities; to consider other practical activities (gathering of medicinal herbs, growing of plants in a small botanical garden at school, making of teaching aids using the gathered materials and results of the performed analyses: billboards, posters, herbariums, and charts).

35. Making of a local tourist guide

This complex task is designed to merge the knowledge in a number of school disciplines into a meaningful whole. A class is divided into several working groups and each group is given a special assignment (individual assignments can also be given). The joint assignment is to produce in the end a local or regional guide for tourists, or a guide which covers the area where the school is located.

To get ready for the joint project, the students must carry out a series of important and productive activities. Some of the assignments for the individual groups can be: the making of a geographic map of the local area (town and environs); the studying of the nature in the local area (using written sources or in the field); the collecting of pictures of the scenery, cultural monuments, parts of the town, important personalities (either published pictures or photos students, themselves, will take); the listing and describing of the tourism offer; the studying of the local history; the studying of the local culture; the planning of sightseeing tours for tourists aimed at getting to know the local traditions, natural and cultural features (for instance, the reconstructing of a historical event or tradition, the picking of medicinal herbs, the original form of village tourism, etc.).

There follow many important and extensive activities -- the putting together of what has been collected into a meaningful whole (selection of the materials, their processing to make them attractive for tourists, writing, editing and illustrating of the text, layout, technical preparations for the printing), and the making of the product attractive for the market, since a guide must draw the attention of tourists. Practically all these activities are exercises in cooperation, the reconciliation of conflicting views, the creation of a joint product through dialogue and a discussion on the advanced suggestions. Different variants of the assignment are possible: the producing of only a section of a guide (for instance, to cover only the natural features of the local area), the making of a general tourist guide or a specialized one -- for young people, hunters, fishermen or lovers of antiques and traditions, etc. In cooperation with travel agencies and local authorities, the activities can result in the writing and printing of a local guide for tourists which is good for use.

36. Research at Home Museum

Important knowledge in different school subjects and lasting intellectual skills can be acquired with the help of a home museum, a local educational resource which exists in many of our towns.

What is a historical document or a historical source? What kinds of historical sources do we have (museum displays, documents, works of art, artifacts, iconographic documents, etc.)? and how can history be reconstructed using them (including blanks in the historical knowledge)? are all assignments for individual students or groups of students, through which the students gain skills in the profession of a historian. At the same time, the studying of the course of historical changes (general ones or those in individual domains, such as economy, technology, culture, etc.) enables the students to grasp the process of historical changes, the connection between the changes in their local area and the general developments in individual epochs, and the causes of these changes, and to do so using their own local area, whose present they know and which they are emotionally tied to. Thanks to this, the students can visualize the time they live in as part of the continuation of the historical time, which is the basic purpose of the subject of History.

Naturally, after the research is completed, one or more separate texts are produced through a concerted effort.

37. Compiling of Dictionary of Local Dialect

In addition to the standard language, every region has a local dialect. The students can be stimulated to do linguistic research in order to compile a dictionary of the local dialect. While in the family circle, during conversation with local inhabitants (especially older ones), in the town library or the home museum, students should write down words which are specific for the area, all the different meanings of those words and if possible also their origins. The putting together of these notes can produce a dictionary of the local dialect and can serve as a basis for pedagogically productive activities and analyses which will be interesting to the children: about the different origins of words they use (Slavic, Turkish, Germanic), the historical changes in the lexicology of a language, the pluralism of linguistic means, the relationship between the linguistic standard and variants, the socio-linguistic and psycho-linguistic problems (public and private use of a language, differences in how members of different social and cultural groups speak).

38. Environmental educational workshop

This is a kind of an educational workshop (see the preceding chapter *Models of Educational Workshops*.) What is specific about this kind of an educational workshop is that it is organized in a specific physical environment: in a cultural institution (museum, theatre, town square), at the site of a historical monument (fortress, old city, house, archeological excavation) or in a social environment (slum, residential district, city district, or village).

Similar to the environmental theatre, the environmental workshop should make maximum use of the specific features of the chosen environment. The entire scenario and the course of the workshop should be based on the use of the elements of the environment in which the workshop is taking place (natural, cultural, historical, social, linguistic and other elements must be made part of the workshop). The creativity of the children in the workshop is stimulated in this way, since the children are to find and put to use the environmental elements of the workshop. The full effect of an experience and the pedagogic-educational objective of getting to know the given environment are achieved.

LEARNING TROUGH PROJECT AS AN ACTIVE LEARNING METHOD

More room will be reserved for the topic of learning through projects. The reason for this is that there is very little literature in Serbian devoted to this subject, and in our opinion, it is a very important form of school work, that should, because of its characteristics find its place across all levels of schooling, starting from elementary school to university (where it should exist as a mandatory segment of every professional training).

The main **characteristics** of project work[13] can be summarized in the following fashion. The project work can be defined as an extensive, broader, demanding form of work in two senses: (1) it requires more time for the realization, because it is not a mere combining of data into a meaningful learning unit; (2) more is learned from this form of work, the learning is widened, occurring at a higher level. The students learn many things from this single experience, but especially how to connect the knowledge elements, skills and techniques of work into a meaningful unit, as well as their application. Many things are learned "along" the course of problem solving (how to check whether we are on the right track, how to record the obtained data, how to organize the data for easier usage, duration estimation of certain activities, etc.) Duration - wise it is very difficult to determine how much time will the project take, therefore, a curriculum can not be fixed, but flexible.

[13] After: Pesikan, A. (2000) "Psychological approach to the active learning of history at the primary school level", Ph.D. thesis, Department of Psychology, Faculty of Philosophy, Belgrade

In the project the students have the possibility to choose the topic to be studied (there is an alternative, especially for younger children when the topic is given), and to create a project design (an outline for solving the given problem), while independently collecting the relevant information, organizing the material, analyzing the data, and presenting the results of their work.

The project can be completed individually or in groups (pair-work, or teams).

Learning through projects exceptionally motivate students for the intellectual work.

Project work is a form of learning more suitable for older students (final grades in the elementary school, high school, university, professional training).

It is difficult to evaluate, i.e. to assess the results of the project work. First, because it asks from the evaluator to use *the same standards* for a very *wide range of different projects* (the problem of criteria coordination for evaluation of different projects). The disagreements between the authors are substantial on *who should evaluate the work*: the mentor who has supervised the work, or another, independent counsel (Henry, 1995). The third dilemma concerns the evaluation of the completed work: *what is exactly being evaluated*, and the part of the final grade devoted for the project. Are we evaluating only the end result, or the course of work: procedure, technique, methodology, choice of the topic (lucid, interesting, serious problem revealed, adequate, not for school or trivial), the complexity of the performed task, the ability to connect and apply the learned, the repercussions of the completed work, presentation of the results (the chosen manner, the form and the quality of the performed presentation), cooperation (the level of cooperation, atmosphere…) in the pair/group? Depending on our opinion about what should be evaluated, what are the elements of the mark, depends who should perform the evaluation (e.g. unquestionably the evaluation of cooperation should be performed by the person who has supervised the work, observed the pair/group while working and solving their problem).

In the organization of the project work, the key thing is the degree of task structuring, reflected in the number of possibilities available to students in making choices and whether the work material has been already prepared, or do they have to find it themselves. Thus we can differentiate between *structured* and *unstructured* project problems. The former are characterized by the limited choice of work topics, and the most of the needed materials have been provided. The teacher assigns a topic, a problem (still students have some choice), using a specified methodology. In unstructured project problems, students completely independently choose the problem they want to address and acquire the needed materials[14]. The students independently design, perform, analyze and present the results of their work on the subject they've chosen, using the data they've obtained. The third type of *semi-structured tasks* can be classified as well, where the field of research and the methodology has been given, but the nature of work is such that it requires a lot of independence and responsibility out of students. For example, the students are offered many historical sources, and different ways for their

[14] Some researchers only the unstructured type of the project work consider being "a project", but the term is widely used for the structured type of task as well.

usage, but the students are asked to pick the three key ones in order to prepare a case study, i.e. to interpret a particular event the best.

If we intersect different degrees of freedom of choice available to students (in the choice of a topic, methodology and the work materials), we can distinguish several types of projects and similar activities which can become some kinds of projects.

Table 5: Review of work characteristics (degree of student freedom of choice and responsibility) in different types of projects and similar forms of work (after Henry, 1995, pg.17)

Project type:	*Topic:*	*Methodology:*	*Materials:*
Life, real	Choice/ assigned	Choice	Not given
Unstructured	Choice	Choice	Not given
Semi-structured	Limited choice	Limited choice	Not given
Structured	Assigned	Assigned	Partly provided
Exercises	Assigned	Assigned	Provided
Simulations	Assigned	Assigned	Provided
Case study	Assigned	Assigned	Partly or completely provided
Essay	Choice	Assigned	Choice

Besides the task structuring, there is one more important dimension that can be used for differentiating the problems addressed within a project: are the *real (life) problems* being discussed, or is this a *simulation project*. With the real, actual problems, students are dealing with some real life problems, tasks, they help solve the problem in the real-life conditions. With the simulations, the teacher offers data that students analyze, while practicing the solution to that kind of problem.

The students must be prepared and trained for this method of learning/teaching, it would be impossible to just give them a problem (or let them choose one independently) and leave them to work, "let them cope". It would be ideal if all students together with a teacher would cover all stages of project work, with teacher clearly explicating each step, elaborating and discussing it with children. For example: 1. Firstly, let's see what is interesting here. Is there a problem that needs to be addressed? (the choice of topics) 2. What do we need in order to deal with this problem, which materials, resources, information...? 3. Where can we find the needed material? 4. How are we going to use this material? (the choice of strategy for problem solving) 5.Studying the material. 6. Working toward the solution of the given problem (everyone could either work on a part or the entire solution). 7. Preparation of a presentation of the completed work. 8. Presentation of the work. 9. Evaluation of the completed work with the precise feedback.

This is a kind of demonstration of how to work, a model-project, with the objective to prepare the students for the work on a project (this doesn't complete their training, in all phases of work, even in completely independent work on a project, the teacher, within the supervision, helps students deal with certain work problems). Gradually the students can become quite independent in their work, from the completely structured project (topic and methodology provided, as well as the materials for work), via several in - between variants, to unstructured projects (students independently choose the topic, methodology of work, and the needed material). A kind of preparation for the project work is so called group work, i.e. cooperative learning student-student.

The most common criticisms to the project work are:

- Asks a lot more of a student than the classical forms of work: independence in the work (the entire work is carried out independently, either when working individually or in pairs, smaller group); initiative (in the choice of a topic, collection of the material, presentation of the completed work); decision making (how to choose a topic, how to find relevant material, how to analyze it, how to present the results), higher thought processes: analysis, synthesis, evaluation;
- Requires more time for the realization (collecting, organizing and the analy-

sis of the material, preparation and presentation of the work), than the classical forms of work;

- Demands careful designing of the work problem, because many of the student projects must necessarily be of limited scope (due to the insufficient student previous knowledge and skills), which could present a problem in certain disciplines (e.g. the instruction of history at the primary school level, where projects must be of a very limited scope, with the smaller numbers of variables included, so that the students could overcome them);
- The students must be previously trained how to work on such problems, they must be prepared and trained for this kind of work (not to practice "throw them in the water, so they will either swim or sink");
- The work on the project sometimes requires additional costs (photocopying, paper, pencils, markers, tapes, photo developing, tickets for a museum, cinema, library, etc.);
- Demands the additional following of the course of work (supervision) on the part of the teacher (even in dealing with the completely unstructured projects), his/her preparedness for leading activities of this type;
- Evaluation of this kind of work requires more time and it is more difficult than the classical evaluation of the school work.

Despite the above mentioned criticisms of the project method of work, there are more very serious reasons for creating conditions for its implementation in the school practice:

1) Enables students to apply acquired knowledge, which is one of the educational goals hardly ever accomplished in our real school practice[15]. The application of the project work is usually seen in some applied disciplines (architecture, management, research in various disciplines, ecology, etc.), and in interdisciplinary areas (such as psychology, biology, history, etc.).
2) Enables better understanding of the academic discipline in question. Historians, for example, always insist that is of great importance for students to work with the historical sources and practice drawing conclusions about a certain phenomenon based on them (of course, simple examples).
3) Develops and puts into practice higher cognitive functions in students (organization, synthesis, analysis, and evaluation of the material), avoiding "potion feeding" students with small portions of prepared knowledge. The project work develops important competencies such as: inventiveness (creative use of knowledge sources, various methods and explanations); problem solving ability (recognizing, formulating and problem solving, the analysis and evaluation of the obtained result); integration abilities (synthesis of the ideas, experiences and information from various sources and different disciplines); decision making skill (deciding what is and isn't important, what should and shouldn't be included into work); the ability of managing one's own work process (an ability to independently perform a complex task, an ability of taking initiative); the ability of efficient communication with others (efficient cooperation and the exchange with others, ability to express one's own ideas in writing).
4) Working on a project motivates students for the work and learning offering meaningful activities which are interesting and important (they have a possibility to choose and independently formulate the problems of personal interest and importance).
5) Supporters of the project work emphasize that this is a better, more complete, and informative way of marking students, especially at higher levels of schooling and professional training, than the classical written or oral examinations, because it demands a complex combination of the higher mental abilities, knowledge and skills (not only specific for a certain discipline, but also general, intellectual) instead of meaningful reproduction of knowledge portions with understanding.
6) The student is faced with a greater responsibility for his/her own learning, he/she plays a much more active role than in the traditional forms of learning/teaching, students gain a greater autonomy, because they know how to study and communicate, they learn to manage the process of learning and work, exercise control over it, which is important not only for further acquisition of knowledge at the higher levels, but also for the application of the acquired knowledge and skills in the real life.

[15] Within the analysis of the educational goals of our school, performed at the basic "Active learning" seminars, according to evaluation of the expert groups: teachers, psychologists, pedagogues (few thousand of them), this is one of the three goals realized the least in our schools.

Without working out of details, we will mention just several project suggestions that could be realized with the students at a primary school level in the instruction of history:

- reconstruction of the spirit of times (this could be a big project for more classes and different grades at the same time, similar to project "The Ball of Pushkin" realized in a Russian school, where all classes of a single grade have prepared a dance ball from the times of Pushkin, with numerous important historical and literary figures, development and preparation of the stage scenery, costumes, texts, music, dances, and everything else needed for vivid evoking of the spirit of Pushkin's times);
- comparative research of a certain phenomenon (e.g. dressing through centuries and today; the concept of democracy in ancient Greece and present western civil democracies, similarities and differences)
- tracing a development of a certain phenomenon (e.g. the types of houses, the means of traffic through centuries);
- the analysis of the connection of phenomena (how have life conditions influenced different human professions);
- making an overview of events in a certain period or throughout the history (e.g. independent creation of the review of great world inventions throughout the history in a certain discipline, like technical inventions);
- independent creation of chronological and synchronous worksheets for a review of a certain period;
- dramatization of a certain historical event (e.g. the Kosovo battle);
- making an outline of a family museum;
- review of different interpretations of the same phenomenon (e.g. what was the use of Stonehenge?);
- graphical review of historical periods with their key characteristics;
- making a "Catalogue of Gods";
- making a "Catalogue of greatest military facilitators/rulers/policy makers/politicians/ in the history" with the collection of data on each of them (children individually find pictures and information, decide which information is relevant, how to organize it, interviewing adults to give their comments about the chosen military facilitators - do they like him or not, and why, children give their evaluations with explanations, the catalogue is of open type and mobile, it can be supplemented with various information from the newspapers, magazines, cover illustrations, e.g. historical figures on the Piatnik playing cards, etc.).

- COLLEAGUES, STUDY BOTANY, SO YOU WOULD KNOW WHICH FLOWERS YOUR GIRLFRIEND LIKES

a student graffiti

EDUCATIONAL WORKSHOP AS A METHOD OF ACTIVE LEARNING/TEACHING

One of the central messages of this project and the Manual is that there is not a single, particular method of teaching/learning, which independently of the contents guarantees the activity of students in the instructional process. Each method has its activating potential that can be realized in a particular context. The only important thing is whether it is a best chosen method for realization of the planned educational goal and is it adequate for the subject matter, or material to be covered.

Therefore, immediately, at the beginning of this text which speaks in favor of educational workshops, we must express our reservations. The educational workshops are not the only possible, the only appropriate solution for the problem of the entire instruction. As it would be impractical and uneconomical for the entire instruction to be based on learning by discovery, equally uneconomical, and perhaps inefficient would be to modify everything in the form of workshops. (text *Market of the ideas for implementing active learning/teaching speaks* in favor of other, diverse possible solution).

What are the educational workshops and how are they different?

In previous years, while this project was living among the teachers who have , despite everything, tried out, listened, and accordingly altered their teaching practice, has brought us back many valuable information not only about the theoretical foundations of this project, but also about the theory of educational workshops themselves. We are very grateful to teachers because they have shared their acquired experience with us. Based on the analysis of the received scenarios and video-recordings, we have found out more about the nature of educational workshops themselves.

The concept of educational workshop, in particular refers to a form of group work, or more precise to a form of interactive group work. It doesn't represent a concrete procedure, technique, exercise, or a single method of learning/teaching (discussed in the Manual), but a kind of methodological approach, the choice of series of previously thought out procedures, techniques, problems in one time sequence and in a single space. **The workshop is a concept referring precisely to that complex entirety bounded by time and space.**

On the other hand, the workshops are educational - because they've been devised with a goal of **stimulating a cognitive development** (learning in the broadest sense) from obtaining and acquiring the factual knowledge, to stimulating and developing the higher intellectual processes (making judgment, drawing conclusions, problem solving, metacognition, etc.). At the same time, with them many educational goals are met, mostly the ones linked to socialization (cooperation within a team, expressing attitudes, accepting different attitudes, dialogue skills, etc.).

Let's discuss the space and time entirety of the workshops, because what we address as a workshop, actually stands for a specific type of instructional situation[16]. The workshop is realized in one **space** ("instructional scene"), whether it is a school classroom, a yard, or nature. While it lasts, the workshop is connected to that space, and we can not envision the possibility for the ambiance to change during a workshop. One of the familiar concepts, used for explaining the processes within the workshop is contextual learning, the learning completely "submerged" and permanently connected to a context. The context is limited by space (ambiance), with all material objects in it, but also with the people present and relations among them.

[16] About the instructional situation see text: Pedagogic interaction: interdependence of activities of students and teachers.

The significance of an ambience (context) for the cognitive process - learning within the workshop, can be varied. In a typical school ambiance, the classroom, the importance of an ambiance is secondary, it plays a supporting role in the cognitive process. On the other hand, as a special subtype of educational workshops, over the time an "ambiance workshops" have been developed. In those, the ambiance, as a cognitive factor has been put into the focus. The cognitive activities of children, i.e. the learning in those workshops have been permanently connected to the ambiance in which it takes place. For example in one ambiance workshop on an old tower, the activities of children

should be devised in such a way, as to be realized precisely only there, and nowhere else: an assessment of the plant world, drawing of the tower floor plan, assessment of the construction style, etc.

Why is **the time entirety** of the workshops important? A teacher or a workshop facilitator intends to initiate and encourage cognitive processes in an entire group of individuals (students), mutually different according to their nature and skills, to support and maintain this process till the intended cognitive objective is reached, and to achieve that in a limited time. In order to accomplish this, he/she plans instructional situations, exercises, techniques and problems[17] different according to their subject matter and form, decides on the order of presentation, how will he/she connect them, the amount of time allocated for each task, and how all of this will look as an entirety, that is what are the chances for accomplishing the cognitive objective.

According to its time limitations, the workshop is similar to the school lesson, but different from it in the duration, the time limitation is more natural, an hour and a half to three hours[18]. This flexible time framework points to the following: as soon as the accent is placed on the child's activities in an instructional process, this requires more time. On the other hand, the time framework of the workshop is much more difficult to plan, because the subject of planning is a process occurring in children's heads and among the children, and not the activity of a teacher as a lecturer at a traditional school lesson. A school bell is not a good partner of a workshop, because forcefully and externally determines the end. The accurate information about the end of the process is in possession of the people inside, the ones who have been involved in the process, the teacher and students.

Therefore, it can be concluded that **the process in the workshop has been bounded by space and time**. The time limitation and space determination, on the other hand, separates the workshop from the project work (see *Learning through projects as a Method of Active Learning*), even though it can contain certain same elements as a workshop. For a particular project, children can collect the needed information in various places, and that can last for a week, a month, a semester or an entire school year.

Besides the context (space and time), the key words, or defining factors of the educational workshop, above all, are:

1. **active participation of students, and**
2. **the exchange.**

1. Active participation of students

Educational workshops are inseparable from the personal involvement of students - thus, they make a good active school example.

To the nature of thought activities (predominantly considered), large segments of this *Manual* are devoted. Here we will just stress that this activity is closely connected with the concept of cognitive experience. That is why, in the literature, when describing the workshop process, the expression experiential learning is used (see: *part III. Theoretical afterword*).

Cognitive process (learning) in the terms of learning/teaching methods

The educational workshop is **not oriented to one method of teaching/learning only**. The only important thing is to choose the methods which will provide for adequate cognitive experience. This cognitive experience in the workshop process gradually becomes knowledge, or the realized educational objective. In adequate instructional situations almost all methods of learning can occur. Since the fundamental principal of workshops is the student activity, this means that in a well designed scenario almost all methods of learning (except "cramming", of course) can appear as methods, which intellectually engage students.

[17] in order to stay within the spirit of the fundamental concepts of active learning/teaching, we will say the techniques, problems, exercises, observed from a position of a workshop facilitator, that is the activities or cognitive experience seen from the position of a student.

[18] This, of course, by no means excludes the possibility for the workshop to last 45 minutes or shorter.

However, the educational workshop is much more suitable for certain methods of learning. Those are, above all, all interactive forms of learning (E2a. cooperative learning teacher-student; E2b. cooperative learning in the groups of students; E2c. team work; E2d. modeling, and C1. learning by problem solving, see section *Methods of Teaching/Learning*). These forms of learning, we can freely argue, are mandatory parts of the workshop approach. The meaningful receptive verbal learning (A2) is also not excluded from the educational workshop. It can be an important method in some activity, but it can not remain as the only method of learning. In other words, it would be difficult to imagine a workshop in which besides the A2, there is not at least another form of interactive learning present. The same applies to the B dimension - practical learning. All methods of practical learning can appear as the part of an activity, especially drawing, writing, poster making, and the alike, but are not the mandatory methods of work.

There is a special relationship between the workshops and the convergent and divergent learning (dimension D). All of the educational workshops have as their objective acquiring some knowledge, and the teacher, by formulating the goal to be accomplished, is directed towards the concrete knowledge, insight, skills, the way of thinking, etc. It could be concluded from this that the characteristic of educational workshop is convergent learning. However, in the workshop one more phase of divergent learning can be observed, when the students are asked to list as many solutions for a certain situation as possible. Afterwards, these various solutions are summarized, with unrealistic solutions discarded, and the realistic one retained. The general atmosphere in this form of work where students are free to state their opinion, their solutions and dilemmas, contributes to that. It is usually insisted on establishment and fostering of such atmosphere.

On the other hand, numerous activities ask of student new, and original solutions (to write a poem, to continue a story, to create an advert…). The advantages of the workshop approach are that it allows for "serious play" with sacred scientific truths, knowledge and interpretations. Therefore, the workshop is equally suitable for convergent and divergent forms of learning, with the divergent one occurring more frequently.

To conclude, all methods of teaching/learning can occur in educational workshops as a part of student activities. While some methods can and don't have to appear, the interactive forms of learning are mandatory.

Cognitive process (learning) in the terms of a task structure

Cognitive experience, submerged into adequate form of learning, will appear if initiated by a certain task, technique, or instructional situation. That is why a workshop is comprised of diverse tasks, which in a dynamical exchange of different types of group work, require students to be faced with the cognitively provocative situations. However, that alone will not guarantee their activity, but another requirement must be met, that the tasks are attractive, meaningful, and connected with their needs and interests. That is why a great attention is paid to motivate the students. Only that way we can secure their participation. Only that will assure that all students have been involved in cognitive activity without force, solely by the task appeal, and that they will not abandon it easy.

Occasionally, the student requirements set by a teacher in a workshop can seem like an invitation to play, because the game has the attractiveness and powerful motivating effect. That is the most efficient way for the workshop participants (whether they are children or adults) to be "drawn" into the process. The game provides the initial motivation, maintains the tension and emotional side of knowing and learning. Therefore, the concern about feelings and atmosphere in the course of learning is not just a nice ingredient making the "bitter pill" of learning palatable, but it is becoming an integral part of the learning process in the function of efficient realization of educational goals.

Sometimes, the solution to the problem of student motivation has been "built" into the lesson outline, into the essential lesson dynamics. Suppose, during a lesson, a trial for a historical figure has been organized, and the students are assigned roles of the prosecutor and the defense attorney. Or, the entire lesson has been set as a "treasure hunt", in which students will discover the first step by solving a particular problem that will allow them to go to the next step, and all the way to the treasure. These are the situations, which do not require special motivational techniques. When this is not the case,

it is necessary to solve motivational problems step by step in a workshop, and then an important role is played by initial warm-up activities (see initial activities in the workshop scenarios that follow).

Let's go back to the problem structure. The games, techniques, "game-like" exercises that appear in educational workshops can be divided according to several criteria:

- Its dynamics, dramatization plot;
- The degree of explicitness of rules (from highly explicit to highly flexible);
- Which mental processes are dominantly involved (whether it is problem solving, or inductive-deductive reasoning, communication, or creative thinking…);
- Which symbolic means are used for the expression of cognitive process (the dominance of a written or spoken word, drawing or a graphical presentation, movement…);
- The number of children participating in a task (individually, in pairs, small groups, everybody);

Here we will mention the games which became a regular repertoire in the scenarios of our teachers. This should be taken as an invitation for the creation of new tasks.

1) Solving of complex problems asking for the connection of school and extracurricular knowledge - usually performed in small groups;
2) Chaining: the first student starts a story or a drawing, or corrects the problem solution of this/her predecessor, and creates a new task…) - done individually ;
3) Guided fantasy: a teacher slowly reads a description of a situation, and the children should become accustomed with the situation. This game is usually used as an initial game with a goal of directing children's attention - practiced individually or simultaneously (all children at the same time);
4) *Pro et contra*: one group defends, and another attacks an attitude, idea, or an action - usually occurring in small groups;
5) Riddles in various forms: quizzes, associations, puzzles (children solve, but also come up with the new riddles) - sometimes individually, sometimes in small groups, or frontal;
6) Detective story: similar to problem solving, but asks for the reconstruction of the event, time, space, rules… - usually occurring in small groups;
7) As if - (playing the individual roles: judge, critic, historical figure, journalist, marketing expert…);
8) Simulation (several roles in interaction: family, court, market…).

We would like to point out that the techniques, exercises, "game-like" activities occurring in a workshop as its segments can also appear as sequences in the sequential analysis (see: *Sequential Analysis of the Active lessons*). The sequential analysis, which directly connects concrete student activities in the course of a workshop with the preset goals, will contribute to our further knowledge about the children's activities occurring during a lesson which we claim to be an educational workshop. Besides, it will provide an insight from another angle, how is educational workshop, as an entity, different from other methods of work.

Cognitive experience (learning) in the terms of organizational during a lesson

In the pedagogic literature, usually several organizational forms of work are discussed: frontal, individual, or group. All of these forms can appear in an educational workshop, with a greater contribution of individual and group work (in pairs, small groups, or team work), and much less frontal method, due to the very nature of work. The frontal method of work is usually reduced to giving instructions on the part of teachers, (what the students should do) and his/her final summary and integration of the students' cognitive processes. The changing of various methods of work within the same workshop, contributes to its dynamics, making it an important motivational stimulus for students.

By performing an analysis of the received scenarios and video-recordings, it has been demonstrated that teachers usually use group form of work in creating the work-

shops. That is understandable, because it is the easiest way for activation of the majority of students in the overcrowded classrooms. The work in small groups is an organizational aspect of cooperative learning. That is why from the viewpoint of active learning we do not talk about the group work, but cooperative learning.

At the same time, it has been demonstrated that the choice of this method of work, involves certain problems that need to be solved as well: some students work in the group and some don't, even when the time is up the group stays occupied with its work resulting that is difficult to assure attention of all participants for the presentation of the work of other groups; if the groups are assigned different tasks covering only certain segments of the material, or certain groups realize only particular goals of the projected, we can not claim with certainty that all students have received an integrated version of the material at the end, or if all students have realized all objectives. A serious question of group work evaluation is opened, as well as the evaluation of individuals within a group.

In search of the ways for overcoming these problems, we suggest the following strategies:

- individual work, whenever possible, should precede the group work; a task, in that case, assigned to the small group is somewhat different from the individual task: children can receive a task, compare individual solutions, integrate them into a single group solution, choose the best solution, to append the separate solutions (classify them, organize them into a table, make a graph presentation, etc.);
- if the groups are assigned different tasks covering just segments of the material, achieving their integration should be built into the scenario: the groups (with the same members), after the work presentation of all groups, receive a new task asking for an integration of the work different groups have completed in the first task;
- the "expert group"[19] technique could be applied. All groups are specializing for a segment of the material in the first task, and afterwards new groups are formed from one member from each of the first task groups. The groups in the new composition, receive a new task requiring the integration of all segments of the material, or for the problem solution, the individual knowledge of group members are need, which assures their activity;
- a variant of the previous method is for all students to study the entire material first, and only afterwards, within each group, each student specializes for a certain segment of the material. For instance, all students read a text on South America, but within each group, one student specializes in the question of politics, another in the question of economics, the third is covering geography, etc.

[19] U literaturi se ova tehnika kooperativnog uåewa zove i "tehnika slagalice ili mozaika"

The success of cooperative learning is in close relationship with the manner of evaluating the group work. If the whole group receives one collective grade, based on their joint product, clearly, the children with the higher level of aspiration will work much harder, their work can become an individual work, while the others, less ambitious will be left out. The results of research have demonstrated that in this case the most efficient is individual grading depending on a group grade. For example, a teacher calls on one member of the group, and the grade he/she receives, is received by all members of the group. In another case, all member of the group present their work, each receiving an individual grade, but at the end only the mean of the individual grade will be recorded as the group presentation grade. In these cases the students are aware that their personal grade depends on individual success of other members of the group. Then, children are very keen to help other group members, and the effects of cooperative learning are the greatest. (see: *Model for Evaluation within the Framework of the ALT*).

Of course, none of the solutions in grading student work are the only possible, but numerous variations exist depending on a goal we want to accomplish. With the previously mentioned solutions, if all students have fulfilled the expected requirements, the cohesiveness of the group is increased, as well as the cooperation within the group members and the exchange of knowledge and experience (even the best students are not at loss, because providing explanations to others is the best way of checking understanding of the material). However, there are other ways of grading which can focus on the fastest offered correct solution, or the best solution (in one variant, the most successful students can work hard on finalizing a good solution which will be used by the others as well), or the most successful pres-

entation of the solution, or recognizing ambiguities, weak points in the presented material, or who will in his/her own words and examples describe the assigns work the best (a teacher could ask for an account or statement about the essence of the assigned material), etc.

Obviously, by redefining the kind of requirement set for students, different kinds of abilities are favored, different ways of presenting these abilities, as well as different styles of learning and intellectual work (even when dealing with the same level of knowledge, e.g. understanding or implementation of knowledge). *By varying the requirements and the ways of grading*, different abilities and personality traits are favored, as well as individual working styles, which necessary involves the higher motivation for learning and work, and the greater efficiency of the learning itself (larger number of students have acquired certain knowledge and skills, they understand are able to apply studied material). If we were to illustrate this on the Picture 2: *Two dimensions of school work* (see: *Characteristics of the Active Learning Project*) , then this would present a situation where high pedagogic efficiency is achieved, while respecting the student's personality. The student works in adapted conditions, taking his/her individual characteristics into consideration[20].

[20] This is a good example how the pedagogic efficiency can be improved, precisely by taking into consideration personal variables. Friendly atmosphere is not just a mere pleasantness, but friendliness of increased work efficiency.

2. Exchange

The characteristic of all workshops, including educational ones as well, is assuring the **exchange among the students**. This clearly originates from the fact that interactive forms of learning play a dominant role. Besides, one of the main assumptions of the workshop approach is that social interaction is a necessary, shaping, element of our knowledge, i.e. learning. By participating in the exchange with others, our own experience and knowledge is firstly established and realized (when describing our solutions, thoughts, insights), and afterwards it is enriched, enlarged, and generalized (by listening to other solutions to the same problem). For the success of this segment, a substantial responsibility lies on the teacher, who should provide conditions for everybody to be heard, to feel free to convey their thoughts, that he/she himself should be an example of good communication (see Appendix 4a: *Some Useful Suggestions for the Seminar Facilitators*).

The exchange, understood as a formative step in the construction of knowledge, appears in the workshop in different forms.

- The exchange that has been **integrated into the task**. This is a situation where students in pairs or small groups work on the solution of a problem, create a new product, or prepare a dramatization. The children are focused on a topic or a problem, and the exchange which follows this process is a means for facilitating the accomplishment of an objective - agreeing on the procedure.
- The exchange as an **additional development, elaboration of the completed task**. This refers to the situation where pairs or groups report on the results of their work, which becomes the basis for the further development. Whether all had the same or different tasks, this is a way for everybody to become familiar with different solutions, points of view, solution procedures, etc. All these differences enrich the individual knowledge.
- The exchange as a **task - discussion**. In this situation, the exchange itself is in the focus, it is the object. Regardless whether it is happening in pairs, small groups or an entire class, it asks everybody to sharpen their thoughts, express them clearly, to discover and understand the thoughts of others, compare them with his/her own attitudes, and change or not change his/her behavior accordingly. Here, the cognitive aspects of this situation have been mentioned, but they are inseparably linked to its social aspect: the skill of presenting own stance, respecting the other and different positions, tolerance, openness of mind, ability of leading an argumented dialogue, etc.

The role of teacher / the role of student

The role of teacher in this form of work is substantially changed. The change we have in mind can be distinctly illustrated by using theatre terminology. With a drama, a play-

wright conceives the entire play, or some of its parts, scenes and actors' activities long before the opening night. At the very performance, the playwright is somewhere behind the scenes, and the main part is played by the actors. Similarly, the focus of teacher activities shifts from **previous to a lesson**, when he/she creates a scenario for the workshop, and collects the material necessary for its implementation. During the lesson he/she plays the role of an organizer, the one who motivates a partner in pedagogic interaction, the one who discreetly encourages when needed, where needed, and as much as needed, while the main role and the dominant activities are performed by children.

The activities of a teacher, therefore, start with the workshop design, from the initial outline, to the carefully planned **scenario** - from step to step, from activity to activity, from task to task. A teacher creates instructional situations, which would initiate thinking activities in students, leading to a realization of the educational goal (see: Table 4. *Differences between the Written Lesson Preparation and a Scenario for the ALT lessons*, within the text *Scenario Production for Implementation of the ALT lessons*). Actually, in the creation of a scenario, the starting point is always an educational goal, which is operationalized (defined), in order to be applicable for a time unit appropriate for workshop realization (a lesson, or a block of lessons), but also students themselves are considered, as well as their needs, interests, existing school and extracurricular knowledge and experiences.

Knowing a student is an important factor to be considered in the creation of a scenario. We have already mentioned that it is good to know the interests, needs, extracurricular experiences of our students. But, most of all it is necessary to accept their age and cognitive abilities and limitations. For example, in creation of a scenario, a limitation of attention and a need for movement in younger students will be taken into consideration by planning shorter duration of certain activities, their prompt exchange, as well as the presence of motor activities. With older students some other activities may be planned, such as the activities asking for a concentrated problem solving in a prolonged time, using abstract thinking.

A written scenario is important, because it gives an insight into the entirety of the workshop. When checked on a paper, whether the scenario is **the best connection for the objective, materials, chosen methods and interests** of students, there is still plenty of time for modification before a teacher enters the classroom (see: *Activities and Roles of Children in the ALT lessons, Scenario Production for Implementation of the ALT lessons, Scenario for the Analysis of the ALT Lesson Scenarios*).

Generally taken, the work on the scenario for the workshop is an excellent exercise for decentration, because it asks for a continuous lesson perception from the **position of a student**. By knowing well the children, a teacher should constantly envision their behavior and reactions to the workshop's tasks. For the moment he/she should forget that he/she is a teacher, his/her intentions for this lesson, to forget his/her own clarity of the logical connection between certain parts, to renounce all inclinations for his/her own creation and to picture for himself: how would he/she, as a student, perceive the workshop and its activities, are the requirements too easy or too difficult, are they logically resulting form one another (from the child's viewpoint), is this in any way connected with their existing knowledge and interests, etc. Therefore, the preparation of a scenario for a workshop should include this mental exercise of envisioning and predicting.

Frequently, the scenario can be roughly divided into three big parts: introductory activities (introducing the spirit of the workshop to students, inducing their attention, and warming them up for the main activity), the main activities (representing the central and key part), and concluding activities (completing the entirety of a workshop).

In the workshop itself, a teacher or a workshop facilitator - **guides** the students form one activity to the next, check whether the instruction was completely clear, organizes the student work, provides conditions for everybody to feel free to express their opinions, and provides assistance only when requested by students, and only as needed for continuation of individual work. Then, a teacher pays special attention for motivating the students. Student motivation is considered at the beginning, while writing a scenario, which includes appropriate ways for motivating the children. But in the very interactive process during a workshop, when the teacher is continuously assertive to student's reactions, he/she detects the potential problems (e.g. a task is too difficult or too easy, it is not connected enough to the current interests or occupations of children), and immediately he/she reacts to that in the next step, trying to maintain a high level of motivation, while not stepping out-

side of the framework of meaningful, goal directed activity. Finally, a teacher is aware all the time that he/she provides a model of intellectual work and a model of cooperative relationship by his/her verbal and non-verbal behavior. (For additional explanations of teacher roles, see text *Inventory of Teacher Roles in the Instructional Process, Professional Development of Teachers and Active Learning*).

From the above mentioned, the nature of student role in the workshop is clear. By allocating a lot of attention to students' needs, interests, experiences and knowledge, and by continuously looking after students' motivation in the instructional process, the student is not a mere impersonal listener, but his/her emotional and social personality spheres are expressed. That is why we have deliberately used in this text two titles: a child and a student. When speaking about a child, we are emphasizing his/her entire personality, and not only his/her cognitive aspect. On the other hand, various workshop activities initiate students to try out domains for which they didn't think they were talented enough: writing poems, public presentation of work results, orientation in space, acting, decision making, etc.[21] This way a wide specter of trial possibilities is opened up in front of a developing child, which is certainly the best way for finding one's own identity, and eventually the future profession.

[21] A frequent reaction of participants at our seminars is that when they are in the role of students covering a certain material, they are not able to recognize themselves, nor their colleagues (some of whom previously known), concerning the abilities they present.

Misconceptions and missteps of educational workshops

In order for educational workshop to yield the best educational effects, certain precautions should be repeatedly taken:

1) High motivation of children, and satisfaction with the activities does not guarantee the accomplishment of the planned educational goals. Happy and laughing faces of children are a success of its own, however the purpose, and a goal of educational workshop shouldn't be forgotten.
2) It is not possible and not needed to translate all educational topics, and educational goals into the workshop format. The main guideline should be: which method will be the best to accomplish the objectives with the given materials, most efficiently and in the most economical way.
3) The problem of positioning of educational workshops into the entire structure of educational curriculum should be constantly borne in mind. If it is not connected with other educational topics, or other work methods, it remains as an isolated island, unusable potential, as an interesting experience, with its meaning is left unclear to children.
4) A dynamic scenario does not imply that children should be overburdened with various activities. The key activities should be distinguished, the key activities from the aspect of cognitive process. It is always better to have one activity well done, even at the expense of other activities planned in the scenario. It is more useful for children to complete one task, than to try out many activities.
5) One should never forget, who should the task be attractive for, that is, the goal is not to design a task to be attractive for the adults and the observers, but for children. This task asks teachers for decentration, or to see a task from the viewpoint of a child, and not his/her own.
6) Even though the educational workshop is one of the forms of interactive work, where different forms of cooperative learning dominate, the workshops are not exhausted by group problem solving. On the other hand, sitting in a group is not a guarantee for cooperative learning. We should make sure that by group work, we have succeeded to activate all children in the best possible manner.
7) No matter how successful certain "play-like" exercises or tasks seem, their continual usage becomes a routine and loses it meaning. If we used a game "pro et contra" many times in a row, this would evoke negative reactions in children "Oh, not again…".
8) The educational workshop does not rule out (on the contrary) using a blackboard, or a notebook, that is all didactic aids that provide the integration of the learned material. The nature of educational process is to constantly link the cognitive experience that children go through, with the objective to be accomplished. Without a well thought out and realized integration, the educational workshop could hardly serve its purpose.

Finally, a question of relevance of educational workshops in our present, actual school can be asked. The encouraging sign is that with the minimal material resources, without expensive equipment (which our schools don't have anyway), a lot can be done by adequately activating students in instruction, in designing and refining the school life, and bringing the whole educational process closer to children. Often (but not necessarily) the workshop implementation is not in accordance with common class-lesson system of work organization in schools. However, this could be solved either by having a block of lessons, or by having certain steps be assigned as a homework. The most important is the existence of good will, and various organizational problems will be handled along the way. The problems that are not solved immediately, represent a list of concrete, sensible requirements needed for the improvement of instruction, how and why would we go about solving it - which is the first step toward a solution.

MODELS OF EDUCATIONAL WORKSHOPS

At this point, we will mention several scenarios for educational workshops. They have been referred to just as possible models, and not the prepared formulas. The materials have been chosen randomly, based on immediate authors' inspiration. The only condition that tried to be met, is that we are dealing with the material from the educational curricula, or that it has been covered by a textbook. We have tried to cover several different academic fields (Serbian language and literature, history, biology). We do not share the opinion that there are academic materials that could or couldn't be realized in the form of workshops. The main constraint for the choice of any, including the workshop approach, is the efficient and economical realization of educational goals.

Due to circumstances, in the offered scenarios a cooperative learning dominates. But, as we have mentioned in the introductory text, even though it is the most common way of workshop learning, certainly, it is not the only one.

CLASSIFICATION OF BIRDS

(Biology lesson for the sixth grade of primary school)

Objective

Understanding of logic behind the classification and the acquiring of specific knowledge.

Materials

- as many as possible (about 100) slips of paper;
- white writing paper size A4: approximately 10 sheets.

Main Steps

1. Individual finding of as many bird classes as possible, on the basis of personal experience.
2. Formation of groups and classification of the assigned classes of birds.
3. Presentation of the group reports.
4. Comparison of the classifications made by groups with the one given in the textbook.
5. Exercises in the classification.

1. The teacher distributes several slips of paper to each student (and leaves the remainder in a place where each student has an easy access to them should he/she need more). The teacher then gives instructions about the assignment: *Let's have each one of you think of as many different kinds of birds as possible. Think of the birds you have seen, those that live where you live (village, town). Try to remember the birds that you have read about, those that you have seen on TV. Write down the name of each different species on a different slip of paper. Try and remember as many species as possible.*

2. When all students have completed the assignment, the teacher collects the slips of paper and puts them all in a hat (bag or a sack). The teacher mixes the slips of paper and divides them up into approximately equal batches. The slips of paper should be divided into as many batches as there will be groups of students.
   The next step is to divide the students into groups. The recommended number of students in a group is four to five, since groups of this size have proved to be most efficacious. The teacher can form the groups in various ways that will guarantee a random choice.
   When the groups are formed, each gets a batch of the slips of paper with the names of birds on them. The teacher gives instructions: *Your assignment is to group the slips of paper with the names of different species of birds on them in the best way you know. Try and find a classification criterion, which will enable you to classify all the birds, whose names you have before you. Should this seem impossible to you, think of another criterion. Then check to see whether the first and second criteria overlap or are entirely independent. Try and find as general a criterion as possible, one, which will help, you classify as many birds as possible. I advise you to take a piece of paper and pencil and to write the ideas down.*

3. When all groups have completed the assignment, for which they should be given enough time, the teacher asks that the groups take turns in reporting the classification they have made and the criteria they have used. The teacher tries to write this on the blackboard or a large piece of paper, insisting each time that the applied criterion be specified. It is very important that the teacher does not evaluate the results arrived at by students, but devotes due attention to all of them. The teacher can commend the efforts and results of all groups, express understanding for the difficulties encountered by the students, or link students' feelings while making the classification with the feelings of pioneer zoologists when they decided to classify the then known birds and faced the same problem as the students.

4. The students are next told to find the lesson in the textbook. They are asked to compare their own classification with the one given in the textbook and to once again group the slips of paper, but this time according to the classification given in the book. While doing so, the students should mark the birds for whose classification they are absolutely sure, those that they are not sure about and have doubts about where to put, and those that they are absolutely unable to classify according to the classification given in the textbook (the classification given in the textbook is not a detailed one).

5. Each group reports which are the birds whose classification they are not sure about and which the birds that they could not classify. All the students participate in the discussion which follows and together arrive at a solution, which they then check out in encyclopedias and biology books (the last listed assignment can be given as homework).

EUROPE XV-XVIII CENTURY

(Chapter from history textbook for the eighth grade in primary school)

Objective

The purpose of this workshop is to systematize the learned material, go over what has been previously learned, get a picture of the horizontal connection of the material, i.e., the connection between several lessons which make up a whole, a chapter. The workshop also stimulates the development of various social skills (argumented presentation of views, dialogue, persuasion, marketing presentation of the ideas) and helps develop creativity.

Materials

- as many different history books about the particular period as possible, maps, art history books;
- blank writing paper size A4 (several sheets for each group).

Main Steps

1. Formation of groups (the students are divided into groups for the first time) and individual studying of the material.
2. Consolidation of what has been learned in small groups.
3. Dissolution of the existing groups and formation of new ones (the second time the students are divided into groups).
4. All groups do their assignments simultaneously.
5. The groups submit reports.

1) The students are divided into five groups. The division into groups is in this case also an introductory, warming-up activity which is related to the academic subject matter. Every student draws a slip of paper with a relevant concept and a number from one to five written on it. The concepts which are written on the slips of paper belong to one of the five categories relating to the academic subject matter: names of great artists of the Renaissance and Humanism; names of great navigators and discoverers; names of technological achievements which made geographic discoveries possible; names of famous works of art produced in the specified period; and, fifth, names of famous rulers and statesmen of the Age of Absolutism (see the list of concepts and categories at the end of the scenario). The students are told to identify the category to which the concept they have drawn belongs, to see which other students have drawn concepts which go in the same category as theirs, and to form groups on the basis of this. If necessary, things can be made easier for the students by having the names of the categories standing on the tables (at which the groups are working). The students should keep their slips of paper because they will use them to divide up into groups for the second time.

We formed five groups of students in this way. Each group is told to learn well only one lesson in the chapter. The teacher gives them instructions: *Your assignment is to learn as well as you can the lesson given to you, i.e., its academic subject matter. We have great geographic discoveries, economic changes, the social order or the culture and art of the period. Take care to study the material in such a way that you can consider yourself an expert. Start with the textbook. Carefully read the lesson and think about what you have read. Ask yourself which are the chief problems, what is the essence. You may find that something is of a particular interest to you. You have ten minutes for this.*

As you can, see, there are four lessons and we have five groups. The assignment for the fifth group is first to get acquainted with the contents of all the lessons and then to turn to other books for research. The teacher puts on the table where Group Five sits various history and art books, maps, and in general interesting reading relating to the period. Your job is to go through those books and see what is to be found in which one, which will be of great importance to you in the subsequent assignment. Look for interesting details about the period.

2) After the time given for individual work, the teacher invites the groups to discuss the problems they have encountered. The teacher tells them: N*ow check within your own group to see whether you have understood everything. Someone in your group may know the answer to your question. Separate what is essential and very important for the lesson from what is only additional information, and write it down. Try to learn the material so well that you can consider yourself an expert on the subject. Bear in mind that you will have to communicate what you know to others in the next activity.*

3) The groups are then disbanded and new ones are formed. The students should this time around pay attention to the number written on their slip of paper. The numbers go from one to five. The students who have number one on their slip of paper make up Group One. In this way, we will get new five-member groups, with one expert per each area (four lessons, plus additional reading).

4. Each group gets a different assignment:

- Group One gets to write a critical review of the period: *Your assignment is to provide an argumented criticism of the period. Make use of all your knowledge and find fault with the period in a biased but argumented manner. Give its negative legacy. Go through the period and select only what is negative. Bear in mind how you will present this to the others.*
- Group Two is to laud the period: *Your assignment is just the opposite. Think of yourself as loving the period, and in a biased but argumented fashion single out all its good sides, its awe-inspiring aspects and elements for which we are indebted to it. Do think about how you will present this later.*
- Group Three will be told to produce a quiz: *Your assignment is to produce a quiz. Formulate ten questions that will cover all four lessons. Make sure that the questions cannot be answered with one piece of information alone (date, name, etc.). The questions should require thinking, the drawing of conclusions and the establishing of inter-relationships. You will put the questions to the class and we will see how much they have learned.*
- Group Four gets to write a poem about the period in whatever form a student chooses (with accent on the happy, tragic or heroic sides of the period): *Your assignment is to write a poem about the period. It may seem difficult or impossible to you, but you will find out otherwise the moment you start working. You can choose any kind of verse you like (decasyllable, rhymed verse, free form). The following is essential: that the group agree on fifteen or so vital data, concepts and conclusions which characterize the period, so that you can define the essence of the period in fifteen or so sentences which you are then to turn into a poetic form of your own choice.*
- Group Five gets to write a biography of someone living at that time or a story about him/her: *Your assignment is to write a short novelized biography of an anonymous citizen who is representative of the period. You can choose any century of the period, country and place you like. The person can be completely anonymous or someone who lived close to some famous historical figure. You can make him a comic or tragic personality. The only important thing is that you describe in the novelized biography the person's daily activities, the food, the clothes, the means of travel, and entertainment, meaning the way of life at the time.*

  After giving the assignments to the groups, the teacher reminds the students that they have a variety of books they should use in doing their work. If possible, students are sent to the school library to look for more books that can be of help to them.

The duration of this phase may vary. The assignment can be given as homework, i.e. to be completed by the group by the next class, or it can be done in one class or a block of classes. Naturally, the longer the time the better, more complex and serious the products will be.

5) Groups report on their work. The groups submit their reports one after another. After to pro and con groups are heard, they are given a chance for a discussion and confrontation of arguments, in which other students may also participate. It is essential that equal attention de devoted to what each group has produced and that all students be attentive, since the material is grasped as a whole through the different solutions given for the different assignments.

The poems can be later used to stage a play, in which all students will take part.

LIST OF CONCEPTS AND CATEGORIES FOR DIVISION INTO GROUPS

	NAVIGATORS	ARTISTS	DISCOVERIES	WORKS OF ART	RULERS
1	CHRISTOPHER COLUMBUS 1	FRANCOIS RABELAIS 1	BINOCULARS 1	IN PRAISE OF FOLLY 1	ELIZABETH I 1
2	FERDINAND MAGELLAN 2	MICHELANGELO BUANARROTI 2	ASTROLABE 2	DAVID 2	KING PHILIP 2
3	AMERIGO VESPUCCI 3	LEONARDO DA VINCI 3	GUNPOWDER 3	THE LAST SUPPER 3	LOUIS XIV 3
4	VASCO DA GAMA 4	GIOVANNI BOCCACCIO 4	CARAVEL 4	THE DECAMERON 4	MARIA THERESA 4
5	BARTHOLOMEU DIAS 5	FRANCESCO PETRARCA 5	PRINTING PRESS 5	THE SONNETS 5	CATHERINE II 5

A FOLK POEM "HASANAGINICA"

Note: *The poem "Hasanaginica" is no longer covered by the curriculum for elementary schools in Serbia. However, guided by the seminars needs, we have used it as an educational workshop model for the poem analysis. This scenario does not represent a substitute for the usual manner of studying a poem, but an additional opportunity (e.g. extension of knowledge) in the Serbian language and literature instruction. We believe that a similar scenario can be applied for the analysis of other poems.*

Objective

The main objective of this workshop is the extension of knowledge following the studying of the ballad "Hasanaginica." Through active participation, cooperation and exchange of views, the students resolve various problems. In the process, the following objectives are also achieved: the culture of speaking is enhanced (the skill of pursuing dialogue and the skill of public speaking); the culture of writing and the literary culture are developed (writing in the decasyllable is practiced, other forms of written expression are experimented with); a critical spirit is stimulated (exercise in an argumented defense of one's views, analysis, the breaking down of a academic subject matter into meaningful units and their synthesis into a new whole). All assignments also develop creativity and the sense of moral and esthetic values.

Materials

- text of the poem "Hasanaginica" for each student;
- short summary of the ballad's characteristics for each student;
- cards for division into groups.

Division into groups

There should be as many cards (for division into groups) as there are students. Since it is necessary to have six groups later on, six well-known folk poems should be selected, those which can also be sung (for instance, our choice are: "Jecam Znjela Kosovka Devojka," "Poljem Se Vije Oj'Zor Delija," "Karanfil Se Na Put Sprema," "Udarala Momce U Tamburu," "Promice Momce Kroz Selo," "Raslo Mi Je Badem Drvo"...) A verse of the selected poems is written on each card. The number of cards, meaning of verses, should be adjusted to the number of students so that there is an even number of students in each of the six groups. When everyone draws a card (after the cards were previously well mixed), the students are supposed to find all the other cards with a verse of the same poem. When the group members find one another, they are to put the verses in the right order. In the end, each group sings its own poem/song together with the others.

Main Steps:

1. Formation of six groups on the basis of the cards with verses of folk poems/songs and the singing of the songs;
2. Expressive reading of the poem;
3. Giving of different assignments to each group;
4. All groups work simultaneously;
5. Each group presents its results to the others.

1. This step is described in detail when listing the materials.

2. In order for everyone to get acquainted with the contents of the poem/song, each student gets the text of the poem/song. The next step is for one of the students, known for expressive reading, to read the poem/song aloud and for the others carefully to listen.

3. The facilitator gives the assignments to the groups, one by one, taking care that all groups carefully listen to all the assignments.

Note: *Based on the evaluation made by the facilitator, i.e., the teacher, who knows well his/her students, their capabilities and talents, a decision is taken on which group gets which assignment.*

I Group One gets to play the part of Hasanaginica's prosecutor who represents the interests of her husband Hasanaga. They are told: *Think of yourself as defending Hasanaga, i.e. his actions. You should convince yourself as much as possible that you are truly Hasanaga's counsel in order to be able to defend him quite partially but in an argumented fashion. Make use of everything you know and you have experienced in terms of culture, sociology, psychology and history in order to defend Hasanaga well and to found well the indictment of Hasanaginica. Pay special attention to the point in the poem when Hasanaga's message to Hasanaginica is for her not to wait for him at home or at his relatives. Why has Hasanaga decided to take this step? Take care how you will present your defense of Hasanaga.*

II Group Two gets to play Hasanaginica's defense. They are told: *Think of yourselves as Hasanaginica's defense. Convince yourself of it as much a possible, so that you can defend Hasanaginica in a highly biased but argumented fashion. Use all your knowledge and experience in terms of culture, sociology, psychology and history in order to defend Hasanaginica well and with arguments. In the arguments you present, you must resolve the key issue in the poem, which is why was Hasanaginica ashamed to go and see her husband? You should also pay attention to how you will present your defense.*

III Group Three gets to write a different version of the poem: *Your assignment is to think of a different version of the poem, written in decasyllables, from the moment Hasanaga tells his wife not to wait for him. The group should first agree on what should happen further on in the poem and then put this in decasyllables. You are absolutely free to present events as you like. The poem no longer has to have an unhappy ending, meaning that it will no longer be a ballad, but it is essential to respect the decasyllable form.*

IV Group Four gets to turn the song into a news story: *You are to describe the event in the song in a way journalists do it when writing a news story. Think of yourself as a Hasanaginica's contemporary. Describe in detail the situation in which the event occurred, the exact place and time. Describe how the characters looked, how they were dressed, and how they lived. Give their characters and what happened.*

V Group Five gets to learn as many lessons as possible from the poem and to formulate them as folk sayings (proverbs, etc.): *Your assignment is to break the poem down into the smallest units -- meaningful units which can be a verse or a part of a verse, a figure of speech, etc. -- and turn them into folk sayings. You can also communicate the messages you discover in the poem in the form of popular morals, proverbs, etc., or you can make them up yourself. Just as well, the messages can have a connection with the contents of the poem or can just remind one of a verse or verses in the poem. Try to find and put into words as many of these morals as possible.*

VI The group gets to write a ballad about Hasanaga: *Your group has to write a completely new poem, a ballad, whose leading character will be Hasanaga. The events you describe in your poem can be happening at the same time as those in the original poem, or your poem can begin when Hasanaginica dies, i.e., when the original poem ends. Get into the role of Hasanaga as much as possible. The group must first decide what the poem will be about, after which the verses should be written in decasyllables. Do not forget that a ballad must have an unhappy ending.*

4. The groups work on their assignments for about half an hour.

5. The groups present their work in the same order as they were given the assignments. After groups one and two do so, they are given time for a dialogue, i.e. they are enabled to present pro and con arguments. The duty of the facilitator is to make sure that the discussion unfolds in an atmosphere of mutual acknowledgment, without interruptions, without verbal attacks... The members of the other groups are permitted to join in the discussion

- WE LEARN 10% OF WHAT WE READ, 15% OF WHAT WE HEAR, BUT 80% OF WHAT WE EXPERIENCE.

Dryden, G., Vos, J. (1994) Learning Revolution, Accelerated Learning System, UK

CHILDREN COMPREHEND THE MEANING OF THE FOLK POEM "OLD VUJADIN"

or

CONTEMPORARY CHILDREN AND VALUE MESSAGES OF THE "OLD VUJADIN" POEM

or

CHILDREN'S UNDERSTANDING OF THE MEANING OF INDIVIDUAL SCARIFICE FOR THE FREEDOM (illustration - the poem "OLD VUJADIN")

Serbian language and literature - the sixth grade

The main idea: To create conditions for the actual encounter of contemporary children and the main messages of a literary work containing behavioral patterns of individual sacrifice for the freedom (the understanding of this pattern, the experience of an artistic work discussing this pattern).

Objectives:

1) Understanding and experiencing the text with a theme of a fighting for freedom and sacrificing for its attainment
2) Analysis of a fictional character (old man Vujadin)
3) Enrichment of the vocabulary: learn the meaning of 3-4 specific words

Besides this, the lesson should contribute to accomplishment of **the middle range objectives**: revising and strengthening of the meaning of literary-theoretical concepts (folk literature, epic poem, decasyllable), but also general and long term objectives: the skill of reporting and communicating, ability for cooperation.

Material:

- Text of a poem, one for each student
- Dictionary of the folk language and foreign words
- Illustration "Haiduci"

Scene (place): regular classroom, movable tables, students in a class

Main steps:

1) Expressive reading of a poem
2) Impressions about the poem
3) Children individually read he/she text of a poem
4) Explanations of meanings of the unfamiliar words
5) The main messages of the poem
6) Presentation of the group results
7) Discussion on interpretation of the poem's meaning
8) Making of the old man Vujadin's portrait (group work)
9) Presentation of the group results
10) Behavior pattern of Old Vujadin: Old Vujadin and we
11) Conclusion

1) The teacher expressively reads the poem "Old Vujadin", providing the conditions for the active listening (calls on the children to relax and carefully listen, to get accustomed to what they hear; while reading the teacher follows the reactions of children).
2) Impressions about the heard text. The teacher asks students (5-6 of them who volunteer) to say whether they've liked the poem and why, whether they like or dislike what Old Vujadin has done and why. The teacher gives possibility for other children to state their experiences if he/she perceives that there is a need for it.

3) Children individually read the text of the poem. The teacher assigns tasks to children to try and understand the text and underline (or write in the notebooks) all unfamiliar words.
4) Explanations of meanings of the unfamiliar words. The teacher write on the board all words that children perceived as unfamiliar, offers explanation for few words that are essential for understanding of a poem, and than instructs children how to use a dictionary in order to look up meanings of the remaining unfamiliar words. Children in groups look up the meanings, or this could be a homework assignment.
5) The main messages of the poem (group work). The teacher once again refers to the text of the poem, and asks children to determine the poem's main messages. At the same time, he/she gives them an instruction to present the poem in any way they like: either to retell it in their own words, or to point to the key verse depicting the message, or to come up with a suitable saying or a proverb.
6) The group presents their results. While the group representative reports on the messages identified by his/her group, the teacher writes that on the board.
7) Discussion on the interpretation of the poem. The discussion is lead by the teacher concerning the following questions:
   - Which statement, or which verses represent the meaning of the poem the best, and why?
   - Do different statements convey the same meaning?
   - What are the arguments for the statements, which are not in agreement?

In the course of discussion, the teacher confronts statements that are not in agreement, and directs children back to the text of the poem to verify interpretations. Finally, the teacher summarizes the possible interpretations, underlines the statements or verses that best represent the meaning of the poem according to children's opinion. The children who think differently are left with the option of keeping their own opinion (the poem can be interpreted in different ways).

8) We are making a portrait of the old man Vujadin (group work). The teacher gives separate instructions to each group. All groups have different tasks.

   Group I: Each group member draws a portrait of Old Vujadin, as experienced during the reading of the poem.
   Group II: Children should have a discussion about Old Vujadin's character and at the end, write a list of words which describe his main characteristics.
   Group III: Children should think, discuss, and describe the imaginary character opposite or entirely different from Old Vujadin's character.
   Group IV: Children should think, discuss and describe a character from the real life / present times, who resembles Old Vujadin the most.
   Group V: Old Vujadin in our class, school, city. Children should think, discuss, and describe a person from their surroundings who is similar to Old Vujadin.
   Group VI: Children should think, discuss, and describe another character from the literature, film, cartoons, similar to Old Vujadin's character.

9) The groups present their results

- An exhibition of Old Vujadin's portraits.
- All other groups which had a task of character description, present one after another their results and the teacher summarizes them on the board by filling in the following table.
- Summary: Old Vujadin's pattern of behavior.

10) Old Vujadin's pattern of behavior: Old Vujadin and we. The teacher asks: Can anyone give an example when he/she gave up something very dear to him/her or has sacrificed something for a higher cause (in order to help someone close, or similar). Afterwards, a connection with the behavior pattern of Old Vujadin is discussed (pointing to the written statements from the Step 6, and a table overview in the previous step). The teacher asks question whether anyone in the classroom could behave as Old Vujadin did, and why (in what circumstance), or is there anyone who would never behave in such a way and why. At the end of this step, the teacher deliberately leaves children without a conclusion but offers them opportunity to further think about it.

Old Vujadin's character	Opposite/different character
Personality traits of Old Vujadin A real life person (who is he/she, what are his/her traits) Old Vujadin from our class, school, the city (who is he/she, what are his/her defining personality traits). Another character from the literature, films (who is he/she, his/her traits)	*Personality traits of a character opposite or different*

11) Conclusion
The teacher integrates all lessons' elements, points to the differences between the characters from the real life and literary characters, points to the differences between the work of art, and the real life (fictional plot, specifics of art language…). The teacher reads one more time several verses from the poem, and suggests that children remember the verses they like the best. The objective of this segment is to confront children with the form and the language of an art work, and not to acquire them in detail, because they we study that later on.

Note: *Alternatively, the last step can be left out.*

- WE HAVE OUR OWN OPINION, BECAUSE WE THINK WITH OUR OWN HEAD.

(a 10 year old, primary school "Zivko Ljujic", Nova Varos)

ECOLOGICAL WORKSHOP

Note: This workshop has been designed for older children in primary schools and high school children. Because it deals with the topics discussed in the instruction of chemistry, biology, and physics, it can be implemented as an interdisciplinary lesson not only in the course of regular instruction, but also in extracurricular activities (clubs, additional instruction).

Objective:

The change of attitude and a viewpoint about the equilibrium problem in the nature. The disturbed equilibrium is not just and only the consequence of the lack of concern and carelessness of people, but also the serious and real problem linked to the increase of population, improvement of living standard and profit, that is the conflicting interests in the matter.

Exposing the process of decision making, especially in situations where we have conflicting group interests.

Materials:

- Cards for division into groups.
- Cards with various information from the areas of chemistry, ecology, economy, geology, medicine. On each card one information about each area can be found. There are a total number of fifteen cards, and the same set of cards will receive each group in the second phase of the workshop (see *Appendix 2* for this workshop).
- Roles: sheets of paper with the roles (local community of Babusnica, government representatives, local politicians, ecologists and doctors, population of the region, regional tourist association). Besides the role, a brief description about the position can be found on each sheet of paper (see *Appendix 1* for this workshop).
- Map of Serbia with clearly defined region of Babusnica (one for each group)
- Blank paper for writing (a lot of paper should be provided for each group at all times).
- Pencils, markers, colored paper.

Main steps:

1) Division into groups
2) Workshop facilitator introduces the situation to participants
3) Division into new groups
4) Expert decision making
5) Presentation of the group work
6) Discussion and conclusion

1) Participants should be divided into groups. The optimal work results are obtained when each small group has 3-5 participants. That means if there are 30 participants all together, 6 groups should be formed. Division into groups for this workshop can be performed in the following way: Each participant draws a card. On each card there is a number 1-5 (the numbers are needed for division into groups in the second phase) and one more concept connected to the economy (agriculture, trade, transport, tourism, chemical industry, mining[22]). The workshop facilitator places a name of each economic concept on the separate tables. The task for participants is to identify to which economic sector their card belongs to and to gather around corresponding table.
2) The workshop facilitator introduces the situation to participants: One of the most famous ecological slogans is THINK GLOBALLY, ACT LOCALLY. Now, we are going to confront various problems in one local situation. *During the NATO aggression, on the FRY territory, 28 large concrete bridges have been destroyed. According to some estimations, for rebuilding the destroyed, we need around 6 000 000 t of concrete. The main material for the concrete is cement. Here is the problem! As you all know, we have two cement plants, and their production is not substantial enough for our situation. Since we have perceived our current situation, let's imagine a completely possible situation: our politicians and managers have established very good contacts with governmental and economical leadership of China. After the initial talks, the Chinese managers have decided to invest*

[22] The logic behind the division into groups is the same as for the workshop Europe from XV to XVIII century

into construction of another cement plant in Serbia. Their interest lies in the fact that 80% of the cement production will be exported to China at more favorable prices then the current market price. Besides, the Chinese are ready to send a group of their construction experts who will participate in the building of the plant. Our government leadership has contracted the Faculty of Mining that performed a study about the marl sites in Serbia. Extremely good site, according to the study is in the region surrounding Babusnica, on the outskirts of Suva Mountain. This required a modification of the general urban plan for Serbia. The public debate precedes the modification of the general urban plan. In the public debate various interested partied participated: local community of Babusnica, government representatives, local politicians, ecological association, population of the region, regional tourist association. And this is your first task.

The workshop facilitator distributes the sheets with roles, map of Serbia with the marked region of Babusnica, and introduces the task: *Each group is a group of one of the interested parties. On the received sheets you have a brief explanation of the roles and your position. Your first task is to get accustomed to your role as much as possible, and from that position note down all arguments for and against building a cement plant in Babusnica. Therefore, what do you think as local citizens of Babusnica, government representative, or the representatives of tourist association about the construction of this cement plant. Try to come up with as many as possible arguments for and against. Discuss within the group each argument and write it down. Let each member of the group make his/her own list of notes, because in the second part of the workshop he/she will have to argue for his/her group.*

3) Division into new groups. *Now, please pay attention to the cards you have drawn at the beginning of the session, which have helped you form these groups. On each card there is a number from 1 to 5. We are going to form new groups and please let all people who have number one on their card sit around this table, all people with number two at this table, and so on.*
4) Expert decision making. The workshop facilitator introduces the task: *As you can see, now in each group we have a representative of the local community of Babusnica, government, local politician, a representative form ecological association, a citizen from the region, and regional tourist association. You are now a small team of experts. You all have the same task. First, listen to the arguments of each group member because he/she is the representative of the interested parties. Then, discuss, negotiate, and as a group make a joint decision - a report for the government on what to do, should a cement plant be constructed in Babusnica or not. Of course, your recommendation must be well argumented. In order to make your work easier, your team has requested and received reports from various relevant experts: economists, doctors, chemists, agronomists, geologists. Expert data are on the table in front of you, and they should be used and interpreted as to support your arguments. (Appendix 2 for this workshop). You have 30 minutes to complete this task. Therefore, a product of your work should be a well argumented recommendation, a report for the government on what to do with Babusnica*.
5) One group after another presents their opinions and expresses its key arguments and information considered before decision making.
6) Discussion about various solutions. The following points should be emphasized in the discussion:
   · In each real life situation there are several interested parties, and each party has its authentic attitudes and arguments;
   · The solution of those real problems, from the stand of ecology, usually involves the choice between the bad and less bad solutions, while the good solutions are either impossible or quite expensive;
   · The responsible decision making includes the prediction of all consequences of a certain decision and a clear conscious whose interest was and in what way jeopardized.

Decision making is a skill to be learned - this skill has been learned for most of us through experience in various life situations, but this is one of the important skills, necessary for out of school life, which should have been developed during the schooling[23].

[23] This aspect is mentioned only when we have adult participants in the workshop.

Appendix 1.

Roles:

LOCAL COMMUNITY OF BABUSNICA

You are the inhabitants of Babusnica. Even during the economical prosperity of Yugoslavia, your region had somehow been left out. Lately, a large number of young people is leaving the place and is settling in larger towns looking for work. Majority of population till now was employed in agriculture.

GOVERNMENT REPRESENTATIVES

You are the representatives of the commission for the reconstruction and development in the government of the Republic of Serbia. After all these years under sanctions, and hard work to somehow break the external wall of sanctions, you have succeeded to make a contract for this work with the Chinese.

LOCAL POLITICAL FACILITATORSHIP

You are the local political leadership. For years you have been battling numerous community problems: bad roads, inadequate health protection, insufficient number of high schools (the young leave for larger towns), old water supply. You have prepared project but noting can be realized due to the lack of money. Next year you are faced with the local elections.

ECOLOGICAL ASSOCIATION

You are the members of the newly formed regional association of ecologists. Some of you are doctors. You love your region, natural beauties of Suva Mountain, on which an endemic plant juniper tree can be found. Regularly you are organizing cleaning of the local river and you also try to raise the ecological awareness in Babusnica's community.

POPULATION OF THE REGION

You live in the area 20 to 50 km from Babusnica. You are mostly employed in the agricultural sector, but often you go to Babusnica, because the closest health center, a post office, market, shops, etc. are there.

REGIONAL TOURIST ASSOCIATION

You work at the tourist association. With a lot of effort, you have succeeded to interest the Faculty of Medicine for the mineral water springs in the spa Spa. Even though it hasn't been well promoted, this spa is well known ands many people form all around Serbia come and visit. At the same time, you are involved in the promotion of village tourism in Babusnica region.

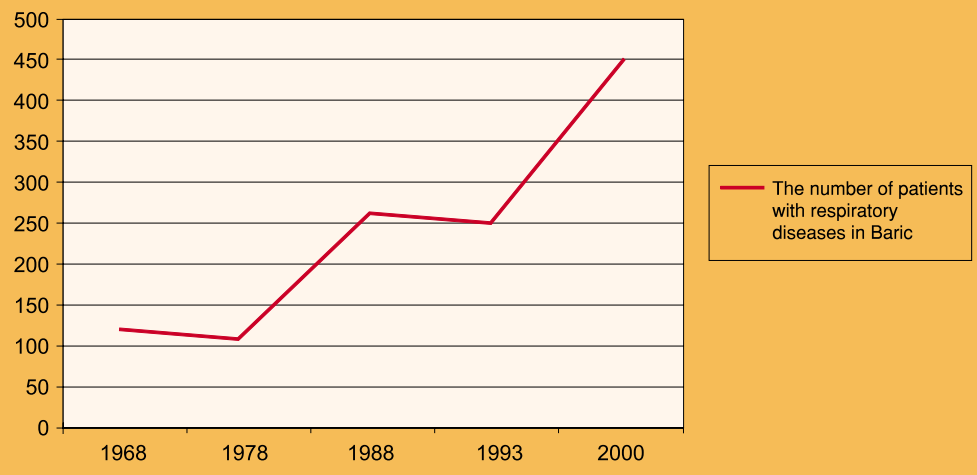
Appendix 2.

Expert data to be received by groups in the step 4. (each group should get one set of data)
DURING THE NATO AGRESSION 28 LARGE CONCRETE BRIDGES HAVE BEEN DESTROYED ON THE FRY TERRITORY
GEOLOGICAL COMPOSITION OF SUVA MOUNTAIN IS MARL AND DOLOMITES
THE MOUNTAIN SLOPES ARE INTERSECTED BY LOG SLIDES, AND IN LOWER REGIONS BY RIVER STREAMS
SUVA MOUNTAIN IS NOT WELL AFFORESTED. THE FORESTS HAVE BEEN CLEARED AWAY IN THE II WORLD WAR, SO THE EROSION IS SUBSTANTIAL
TECHNOLOGICAL SOLUTIONS FOR THE CURRENT CEMENT PRODUCTION DATE TO THE 70-80'S
THE POLLUTION EFFECTS AROUND THE CEMENT PLANT ARE ESTIMATED IN THE RANGE OF 20 KM
THE MINISTRY FOR ECOLOGY HAS STARTED THE INITIATIVE TO PROCLAIM THE SUVA MOUNTAIN LOCALITY AS "PRESERVED NATURE AREA" IN COOPERATION WITH THE BULGARIAN COUNTERPARTS. THIS WOULD BE UNDER SUPERVISION OF INTERNATIONAL ECOLOGICAL ORGANIZATIONS.
SERBIAN GOVERNMENT HAS STARTED THE INITIATIVE FOR DEVELOPMENT OF VILLAGE TOURISM
WIND DIRECTION FOR THIS LOCALITY IS WEST-NORTHWEST. CLIMATE CHANGES ARE TO BE EXPECTED IN TE RANGE OF 50KM.
THE PRODUCTION OF CEMENT IS CONTROLLED BY INTERNATIONAL STANDARDS. THUS, THE PRICE OF CEMENT IS QUITE HIGH AT INTERNATIONAL MARKETS. IN THE LAST SIX MONTHS THE INCREASE OF PRICE HAS BEEN OBSERVED (IN FRY THE PRICE IS 3-4 euros/50 kg)
A CEMENT DUST IS ONE OF THE BIG POLLUTANTS OF THE NATURE. THE CONSEQUENCES ARE LETHAL FOR PLANTS, AND DANGEORUS FOR HUMAN HEALTH
THE AVERAGE PRICE OF THE FULL BOARD LODGING IS 5 euros. CURRENT CAPACITY IS 200 BEDS.
ON SUVA MOUNTAIN THERE AREN'T ANY ROADS. THE ONLY TRANSPORT DIRECTION IS THE SICEVO GORGE
THE CEMENT PRODUCATION TECHNOLOGY IS VERY LOUD (IN CERTAIN PHASES OF WORK OVER 100 dB)
SUVA MOUNTAIN REGION IS POOR WITH RAINFALL. AVERAGE IS 220 mm/m2 PER YEAR.
THE SUVA MOUNTAIN REGION IS SPARSELY POPULATED
THE AVERAGE NUMBER OF PEOPLE EMPLOYED IN THE CEMENT PLANT IS 600. THE AVERAGE NUMBER OF EMPLOYED PEOPLE WITH HIGHER EDUCATION IS 50.
ACCORDING TO EUROPEAN STANDARDS, THE CONSTRUCTION OF CEMENT PLANT MUST BE FOLLWOED BY THE INCREASED HEALTH PROTECTIONM OF THE EMPLOYEES. THIS MEANS THAT ONE HEALTH PROFESSIONAL SHOULD BE EMPLYED FOR EVERY 60 WORKERS.
IN THE REGION OF BABUSNICA, THERE IS A SPA WHICH HASN'T BEEN DISCOVERED NOR PROMOTED YET. FIRST, STILL NOT ANALYZED DATA SHOW A LOT OF MINERAL SPRING WATERS.
STATISTCS SHOW THAT WITH THE INDUSTRIAL DEVELOPEMNT OF A REGION, THERE IS AN INCREASE OF SERVICE AND ENTERTAINMENT OBJECTS (PUBS, RESTAURANTS, POOL ROOMS, CLUBS, ETC.)

Contribution of certain economical segments in the GPR

	1985	1990	1995	1999
Chemical industry	16.8%	19.3%	11.4%	61%
Mining	13.4%	15.2%	10.8%	4.2%
Tourism	7.3%	9.4%	5.8%	2.1%
Agriculture	21.6%	23.8%	29.7%	33%
Transport	11.6%	13.9%	5.7%	3.2%

The number of patients with respiratory diseases in Baric



- WE ARE SUCCESSFUL WHEN WE DO WHAT WE LIKE.

(a 10 year old student, primary school "Zivko Ljujic", Nova Varos)

ONE MORE OBSERVATION ABOUT THE PRACTICAL IMPLEMENTATION OF THE ALT IDEAS

These reviews of various possibilities for the implementation of the active learning/teaching ideas could be endlessly extended. The active learning/teaching can also be differently operationalized. It is important to emphasize that here we didn't provide any ready formulas. Everything presented in this second part, had an objective of showing one more time how the general ideas of active school, which are the basis for this *Manual*, could be specified and operationalized. Thus, it has been shown that these ideas need not be on the margins of teaching as the principal activity, but can be naturally incorporated to the very core of the instructional process.

In this part, above all, our intentions was to show that performing instruction can be designed in such a way (conceptualized, constructed, conceived) that the students are *necessarily involved in the planned activities*. Therefore, this is not an appeal for students to do this or that, as usually done in the preface of any textbook, nor are the students given unspecific, vague, and optional instructions like problems found at the end of each textbook chapter. Instead, the active instruction is formed in such away that student activities are an important component and its integral part. Precisely, the instructional process in not broken down into two equally separate parts: teaching, what the teacher is doing and what comes before on a time scale, and learning, what the student is doing, arriving later on the time scale, and quite independently of teaching.

Quite the opposite, the active school is achieved when teaching and learning become truly interactive process: teaching/learning, where activities and roles of teachers and students are closely intermingled and make up (as it should be) a pedagogic ways of interaction as one of the most productive form of interpersonal relationships.

The market of ideas had an intention of showing in how many different ways the spirit of active school could be realized. If the analysis of the presented ideas is performed, the following conclusions can be drawn:

- some forms of active teaching/learning are more suitable for younger, and some other for older students;
- some forms are more general, and thus applicable in almost all school subjects, because they test general intellectual skills, while the others are very specific, connected to a certain school discipline, and encourage the activities inseparable from those academic subjects;
- some activities like field research, are more external in nature (motor-practical), while others are more internal mental activities (thought comparisons, generalizations, conclusions);
- some are more artistic (divergent, creative), and some closer to strict logical activities encountered in sciences;
- some of them are receptive and activities of understanding of the offered intellectual contents, while other are connected to the discovery of something not initially given;
- some are more of a school type, more connected to the school surroundings, while others are inseparable to the environment outside of school and the local community;
- some are individual and solitary, while the others are group and cooperative. Both of which represent fully engaging activities, but ones provoke more individual processes, while the others more social process of exchange and cooperation;
- the above mentioned methods of active teaching/learning presuppose various degrees of independence in student work.

Let's repeat, with this approach of *Active learning* prepared formulas are not offered. Everything described should serve as a stimulus to teachers to actively and independently create their teaching activity. The presented ideas could be developed and finalized, various described methods of work could be mutually combined, and the suggested ideas could be enriched with the ideas formed in other parts of this *Manua*l.

The main and the right way for the development of the active school ideas should yet to follow: creative mobilizing of an army of over 90 000 qualified teachers working in Yugoslav educational system. Inspired by the general ideas on modern education (some of which can be found in this *Manual*) and founded on one's own practical experience, while using the potential existing in the academic materials of any school subject - this army of teachers, or at least its interested part, is the only force to complete a necessary modernization of the education.

Through the Active Learning Project this is considerably on its way. Of course, there are (and are very welcome) some other impulses toward the same direction.

- A MIND ONCE MARKED BY A NEW IDEA CAN NEVER RETURN TO ITS INITIAL STATE.

Oliver W. Holmes

B2. ANALYSIS OF THE ALT LESSONS

PEDAGOGIC INTERACTION: INTERDEPENDENCE OF STUDENT AND TEACHER ACTIVITIES

The historical development of schools in Europe is one of the reasons for domination of a lecturing method, leading to a form of catastrophic deformation. As a result, in the school practice (and in some pedagogic theories as well), the process of school learning loses its important quality, to be a form of human interaction and communication.

When mentioning the processes of interaction and communication, it necessary leads to several inevitable and quite important consequences: that it is a two-way process, in the course of which it is important for the states and reactions of the partner in communication to be taken into consideration, there must be a permanent turn-over of the roles between the one who transmits and the one who receives messages, the interdependence between the partners in communication must exist, as well as the rules (explicit and implicit) controlling the process of communication. It could be concluded that whenever the feature of interdependence is annulled, serious consequences for the efficiency of the process will occur. In short, all forms of "pedagogy without a child" or reducing the school learning process to mere teaching (in the sense of lecturing), represent a kind of pathology of the school as an institution, as well as the school learning.

Therefore, the syntagm *teaching/learning*, which has been systemically used in this book, is a first signal that we are returning to developmental nature of the process of school learning - that it is a type of interaction. Consequently, it is inevitably one form of relationships among people. Thus, it includes all those important components of that relationship such as: conscious and unconscious affective ingredients (resistance, affective bonding or conflicts, biases), totality of complex dynamics of social relationships (hierarchy, dominance, equality, discrimination, etc.), and all problems and difficulties of the exchange process (understanding-misunderstanding, barriers in communication, the loss and distortion of information).

Of course, the pedagogic interaction is a specific from of interaction (retaining the all above mentioned characteristics of any interaction). It is one of the basic patterns of human interaction, originating from the characteristics of the human species, included into the term "animal educandum", i.e. the fact that the characteristics of the human kind can not be achieved without the learning process.

The fundamental distinctiveness of the pedagogic interaction and communication originate, precisely, from that authentic characteristic of the human kind. That is why the first and important feature of pedagogic interaction is that the essential function of that interaction is learning. Here the learning is understood in a very broad sense, and includes all models of learning (conditioning, memorization of facts, modeling, but also more complex aspects of learning such as: learning by discovery, experimenting, independent problem solving, individual knowledge construction, social construction of knowledge, formation of the system of attitudes, believes, values, etc.).

The second important characteristic of a pedagogic interaction is the asymmetric nature of that interaction - closely related to learning as the basic function of that interaction. Asymmetric nature can be observed in different ways: the interaction between mature and immature individuals, between the ones on the higher and the lower level of the general development, or the development of some functions (e.g. cognitive development), or it is simply an interaction between the ones who know more about some academic disciplines and the ones who know less, or different combinations of these asymmetries (a great challenge for the common school practice represents the situation when children at lower cognitive development demonstrate more knowledge in a specific discipline).

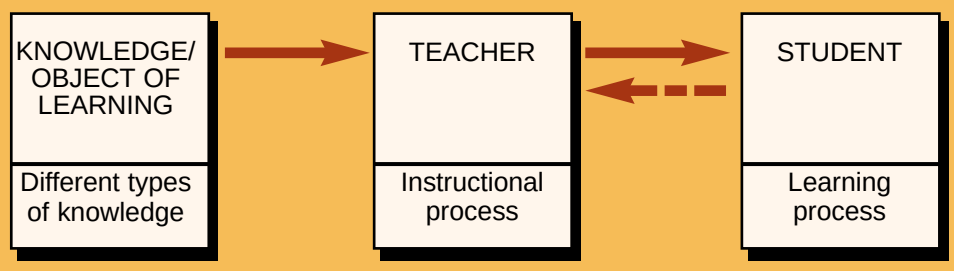
The third specific characteristic (also inseparably connected to the previous two) of the pedagogic interaction is that the entire interaction is organized around some knowledge, some object of knowledge. Therefore, the pedagogic interaction is not just an interpersonal relationship (a mutual relationship, relationship between individuals), but also the third pole of that interaction, its integral part comprises some knowledge, with all the char-

acteristics of its nature. That knowledge can be a corpus of information to be acquired and processed, but also all different kinds of knowledge: conceptual knowledge (a system of concepts) different for various domains, practical knowledge, skills and abilities, procedural knowledge (know-how, procedures, techniques, rule systems) etc.

If we take into consideration all of the above mentioned (the process of school learning as a form of human interaction, characteristics of that interaction, differences in the nature of knowledge at the heart of pedagogic interaction), and if we bear in mind all the differences of partner characteristics in interaction (the age of children or adults who learn, differences in the nature of knowledge in various domain of human knowledge), then it becomes clear that there is a great *variety of the kinds of pedagogic interaction*.

In the pedagogic practice there are different kinds of pedagogic interactions depending on different *conceptions on school* (education). Mostly, different conceptions on school can be defined as a cluster of specific characteristics of pedagogic interactions. So, over the last three centuries traditional. The characteristics of this pedagogic interaction can be mostly explained by the fact that the school voiced the ambition to be mass school (organized according to some forms of mass industrial production). The essence of this kind of pedagogic interaction can be simplified in the following scheme 5.

Scheme 5: Linear model scheme of pedagogic interaction in traditional school



This scheme is characterized by the following:

- The process of learning is linear, moving (mostly) in the direction indicated by the arrows (the dotted arrow shows a minimal possibility of action going that way).
- A teacher, professionally trained in some academic discipline, occupies the central place in this interaction. Here there is a possibility of latent danger (usually turned into the reality) for the entire school to be organized around professional activities of the teacher (thus the theories of school learning are often reduced to "theories of teaching).
- The teaching (in the sense of lecturing) masks and marginalizes the process of learning in students, to a such extent that sometimes teaching and learning are regarded as synonyms (e.g. this school is curriculum centered school and does not focus on the learning process in students, the stress is on delivery of the curricular contents and not on student achievements in acquiring the contents, see: *Characteristics of the Active Learning Project)*.
- The most far-reaching negative consequences of this model of pedagogic interaction is the possibility to jeopardize the essential aspect of school learning - the very *interaction*. In the theory and in practice, this unique process of interaction has been broken down (almost as a rule) into two isolated parts: that what the teachers are doing (that is teaching), and that what the children are doing (learning process), with deadly consequences for the efficiency of school learning. Besides, one fundamental human relationship is deformed and dehumanized.
- This linear relationship greatly stops a direct interaction between the knowledge and the student, an important component of the pedagogic interaction (the knowledge is usually mediated by the teacher, it comes through him/her). By doing that, some higher, fruitful forms of learning are eliminated from the practice.

From this general formula of the traditional school originate the basic forms of teaching/learning encountered:

Firstly, domination of lecturing. The first consequence of this type of teaching/learning is its reduction to just one pole, i.e. teaching (roles and activities of the teacher), while the other pole has been neglected and marginalized24. That is how transmissive forms of school work prevail, at the expense of interactive forms. The transmissive forms of work, under ideal conditions, can provide a transmission of a ready-made knowledge, however, quite often only the illusion of transmission is created (see *A Review of a Possible Lecture Breakdown, in Methods of Teaching/Learning*). The most common form of transmission teaching is expositive teaching (including the demonstrative teaching), i.e. such process of instruction where some knowledge is presented through teacher activities. The status of a student in such instruction is a status of observer, receiver. According to the general understanding, this status is quite inefficient, due to the simple fact that it has a small potential of provoking independent student activities.

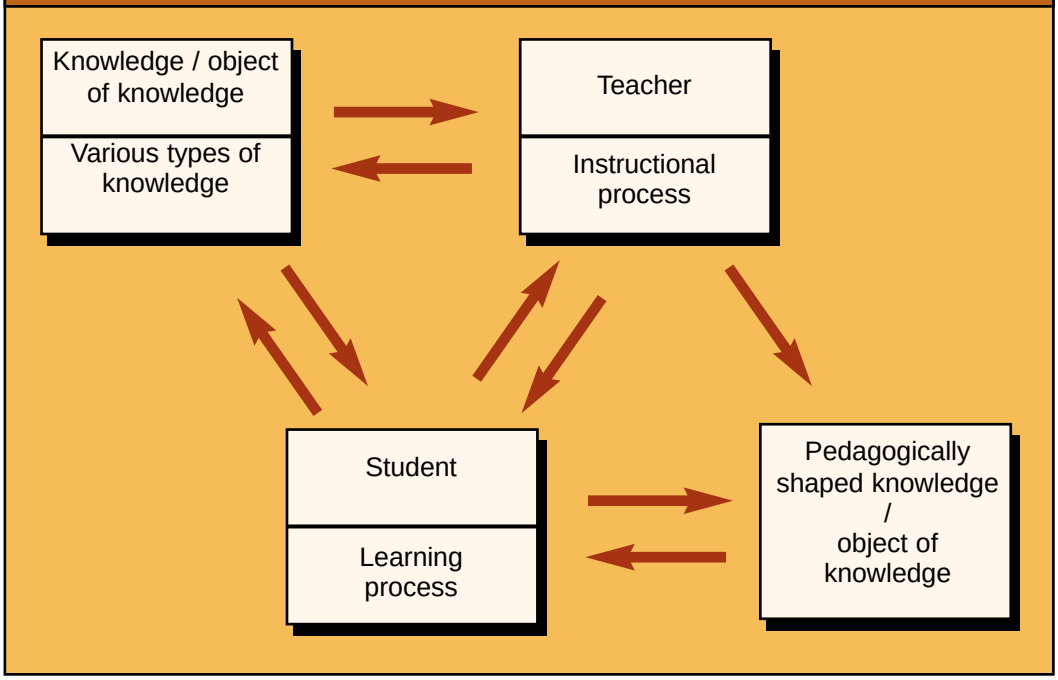
The best form of transmissive and expositive (lecturing) instruction is transmissive-through-questionning i.e. teaching in which new material has been presented in a form of a problem (for students!), i.e. several questions are opened, and the presented new material gives answers to those questions; or problems are posed based on linking of some new knowledge and personal life, professional interests, and knowledge, but also from the expectations of the ones who learn. This form of transmissive instruction is very rarely encountered (only in some schools and in the practice of a few teachers) and to a great extent it preserves the school learning as a quality of genuine pedagogic interaction (because the other partner - student is taken into consideration as well). This comes quite close to the interactive forms of instruction (see *Methods of Teaching/Learning*). But in this case there are no mechanisms to evaluate the nature of the learning process and the number of students involved (see: *Meaningful Verbal Receptive Learning*).

The attempts to reform the ways of school work and the pedagogic interaction at its core, need to develop new models of pedagogic interaction practically and theoretically, and most of to preserve in life and school work (and education in general) the *quality of interactivity*.

For the needs of the Active Learning Project, it is also necessary to depart from the linear model because it is fundamentally non-interactive model shown in the previous scheme. For practical purposes, a temporary model has been developed, which is represented in the Scheme 6.

24 The fact that the teachers, other personnel and their professional associations are far more powerful social group than the students, contributed to this situation to a great extent.

Scheme 6: Scheme of the model of pedagogic interaction in the ALT



This more complex and nonlinear model introduces a lot of innovations and demonstrates one of the possibilities of overcoming the traditional school model:

- To the educational process an intrinsic and fundamental quality has been preserved - it is one of the basic forms of human relationships, which means that it is a two-way process of interaction and communication. Therefore, it is truly a process of teaching/learning.
- Practically speaking: a feedback from teacher to knowledge has been established, and a teacher is not just an agent of knowledge transmission (involvement of teachers in defining school curricula, reconsidering the meaning of knowledge in his/her academic discipline in the light of instructional experience, etc.); the instruction itself becomes a two-way process of continuous pedagogic interaction in which the teacher is not only in the role of lecturer, but also plays important partner roles in a direct pedagogic interaction with students; an indirect interaction with students is being introduced in the form of pedagogically shaped knowledge (where the teacher is in the role of an organizer and a director, and students are left with the possibility of direct interaction with knowledge).
- It is of special importance that the two models of indirect student - knowledge (i.e. object of knowledge) interaction are introduced. So, besides the classical scheme in which the student enters the interaction with knowledge through the teacher as a mediator, two new models of pedagogic interaction come into view: (a) an indirect interaction student-knowledge didactically designed by the teacher, and (b) a direct interaction with knowledge or the object of knowledge.

These innovations in the model of pedagogic interaction represent a basis for all those models of learning present in the modern educational theory and practice such as: independent assessment (in the lab, field work, independent observation and analysis of the observed, individual problem solving, learning by discovery, cooperative learning, individual construction of knowledge, social construction of knowledge - co-construction, children to children learning, reciprocal learning (including the reciprocal learning where teachers partly learn from students).

These models of pedagogic interaction give a possibility of departure from the classical mission of school - *a transmission of ready-made knowledge*. This mission still remain one of the school missions, but new functions are introduced such as: intellectual autonomy (training for independent work, independent assessment, individual problem solving, learning to learn), encouraging development of thinking (by studying some domains of human knowledge, the modes of thinking characteristic of those fields are acquired), initiative (which can be developed only through the mentioned models of independent and direct interaction between the one who learns and knowledge/object of knowledge, the ability to evaluate knowledge, the ability for social interaction, exchange and cooperation can be developed only through a lasting process of participation in social interactions.

It is important to emphasize that within the classical linear model, basically, the models of learning which go beyond the transmission of ready-made knowledge can't be developed, but are extremely needed in modern society. These models are the core of the active school.

Due to its importance for the practice of active learning (not only in producing scenarios for the ALT lessons, but also for the analysis of the active lessons), from this nonlinear model we want to generate a concept of **instructional situation**. This concept summarizes what is new in that model - the importance of a two-way pedagogic interaction and the new components of pedagogic interaction between the one who learns and knowledge / object of knowledge.

The instructional situation can be defined as a set of elements which by its structure cause the learning activity in learner. Elements (components) of this situation are:

- General psycho-social psychological atmosphere in the learning environment;
- The physical environment of the learning process (classroom, specialized classroom, laboratory, natural environment, cultural-historical environmental setting, etc.);

- Planned modifications and designed arrangement of the physical environment, i.e. setting of the surroundings (planned modifications in the environment, equipment, didactic aids, audio-visual equipment, instructional materials, etc.);
- The contents of learning, knowledge / object of knowledge with all specific characteristics of each knowledge domain;
- The system of social relationships and social roles (the power relationship between the teacher and students, relations of submission and equality, the structure of relationships between students themselves and the types of roles students have in learning activities, partners in pedagogic communication, etc.);
- The form of pedagogic communication, or the lack of it (teacher-students, students-students, students-knowledge / object of knowledge);
- The goals of learning;
- Methods of teaching/learning adequate for the nature of knowledge and learning goals;
- Assignments for the ones who learn and instructions of how to realize these assignments.

All these elements must be integrated into a complete pedagogic - dramaturgical idea which would provide necessary and sufficient conditions for generating planned learning activities in learners.

That pedagogic - dramaturgical situation is defined in the scenario for the ALT lessons.

For example, if instruction is taking place in the natural environment, with an aim that the ones who learn individually observe and make the analysis of the observations, e.g. dependence of some phenomena in biological organisms, then the complete scenario must guarantee that it will generate just those autonomous activities in children.

For the analysis of the scenarios and the ALT lessons, it is important to bear in mind the following parameters of instructional situation:

- Are all components of the instructional situation present?
- Has each of the components been prepared in such a way as to contribute to the goals of instructional situation (e.g. vague assignments or disturbed social relationships could damage everything)?
- Are all components of the instructional situation well connected and coordinated?
- Does the intended form of pedagogic interaction provide conditions for genuine interactivity (does it avoid the risks of domination, one-way action, or does it provide the equality of the partners, etc.)?
- Does the pedagogic - dramaturgical idea possess a sufficient potential for generating activities in children (motivation for participating, constructive arousal of energy between the roles, challenging tasks and problems)?

As you can see, here we highlight the analogy between dramatic situations - one which necessarily generate certain behaviors (activities), shape certain roles and lead to dramatic effect - and instructional situations - which by their entire setting inevitably generate specific activities and specific roles in learners, generating some pedagogic effects (learning effects).

Quantitative aspects of pedagogic communication

Here, we will deal with the quantitative aspect of pedagogic communication, because one of the ALT aims is to overcome the phenomenon of student passivity, so often encountered, and try to initiate learning activities in the vast number of students.

The aim of the active school is to involve almost all children in pedagogic interaction and the relevant learning activities in all instances of active teaching/learning.

This is of course the maximal requirement which could be fulfilled only under certain circumstances. Still, this requirement remains the aim, and a standard for assessing each concrete form of instruction and each sequence in the process of teaching/learning.

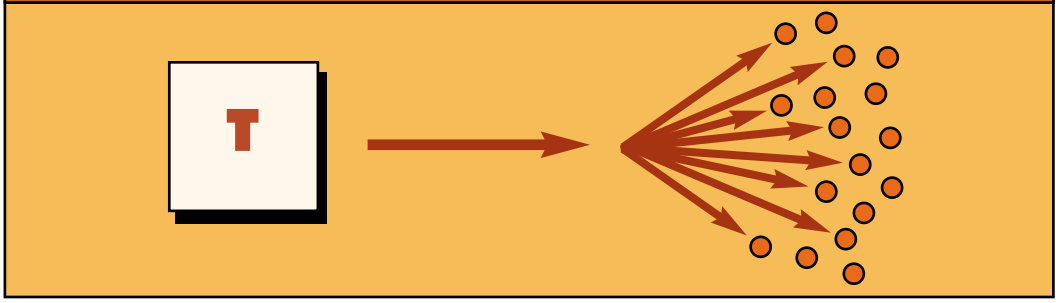
From the viewpoint of communication theory, the big problems emerge from the very nature of the mass school from the fact that in each class in the school we have two partners of pedagogic communication and interaction, who are quantitatively disproportional: on one side there is a teacher, and on the other side there is a great number of learners.

From the point of view of communication, this situation is abnormal and opens many questions such as: on one side we have a teacher as a partner in communication/interaction, and who is the partner on the other side (all students or just a individual student); is it possible to have a two-way interaction and communication in that situation?

The first far-reaching consequence of that situation is an enormous risk for deformation of the pedagogic *interaction* - to become *a one-way transmission process* and tutoring (or more precisely an illusion of transmission and lecturing). Indeed, quite often this becomes one non-dynamical and inefficient teaching process (if certain measures are not taken) completely separated from the other pole of interaction - the learning process. The separation is a separation in time (teaching at one time, and learning at another) as well as in the very nature of the process.

Here we will analyze the modalities of pedagogic interaction as they are encountered in the school practice of the mass school.

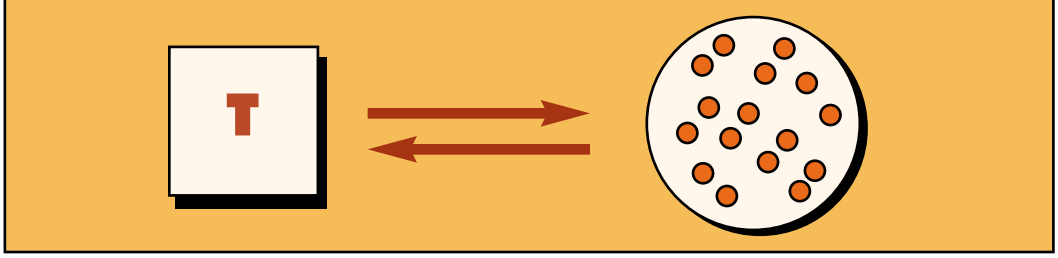
Pedagogic interaction - Model 1: Transmission



T = teacher, the part on the right: class of students

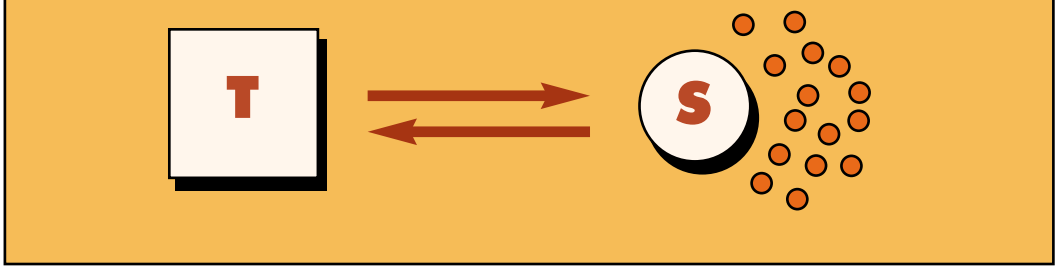
This is a very common situation and it has its place in education, if the aim is the transmission of ready-made knowledge. The problems with this kind of pedagogic communication are: it doesn't even guarantee the transmission of knowledge (see: A Review of a Possible Lecture Breakdown, Methods of Teaching/Learning); a pedagogic interaction as a two-way process does not exist (only some forms of transmissive-questioning models of learning come close); even in this models of learning, some aims of educational(intellectual autonomy, development of social and communicational skills) are not attainable even in principle. The degree of student activity is generally quitelow.

Pedagogic interaction - Model 2: The Choir



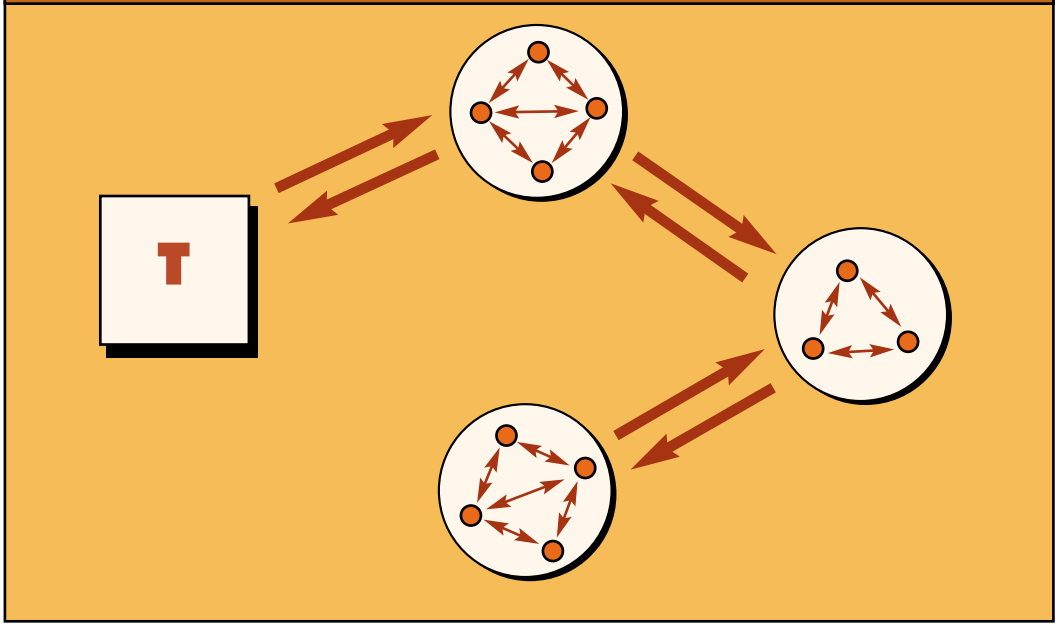
This model is also frequently encountered in the practice, but a real meaning of this model of pedagogic interaction is not quite clear: neither it is clear who participates in the "choir" response to teacher questions, nor what precisely the behaviors of students mean. Probably, this kind of communication gives teacher an illusion of having a conversation partner on the other side. The degree and the meaningfulness of activities are quite problematic in this case.

Pedagogic interaction - Model 3: Teacher - one student



From the viewpoint of communication, the normalization of the rapport occurs, at least the partners are clearly known and a two-way communication is present (the question of contents of this two-way exchange still remains, because it is often reduced to the mere responding to reproductive questions, but it doesn't have to be the case). The major problem of this form of pedagogic interaction is that it is unknown what the other students (from few dozens to several hundreds in big lecture halls) are doing (except the one answering questions). The common situation is that the rest of the students understand this dialogue as a "private" thing of the two speakers. In this model there is an activation of the one student, which can be intensive and meaningful, but generally the degree of activation of all other students is very low.

Pedagogic interaction - Model 4: Interaction between groups of students



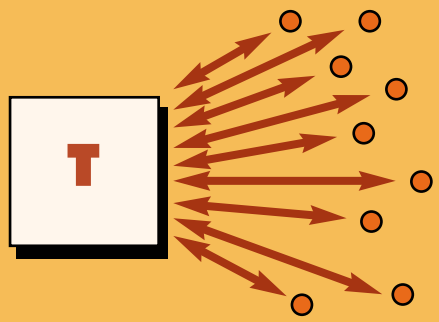
This kind of pedagogic interaction has been selected because of two reasons - to lessen the meaningless in interaction: one (teacher) to many (students in a class), and to increase the possibility of participating in the learning activities of a greater number of students. Indeed, this model makes possible a real two-way interaction within each group (but only between students) and the activation of greater number of students.

The problems occurring in this type of interaction are the following: the interaction of a teacher is just temporary (when he/she approaches the group); the equal activation of all students is not guaranteed; the kind and the mode of activation is not the same for all groups, so there is a danger of parceling up the curricular content and a certain specialization (each group learns just a part of the whole); when it is time for the presentation of the group work, we come across the problems charac-

teristic of the Model 1 (one group member presents the group work, essentially reduced to lecturing).

In this model there is a possibility for a genuine pedagogic two-way communication, first of all between the students, also there is an increase in the number of students participating in learning activities that could be meaningful and relevant (but there are no guarantees).

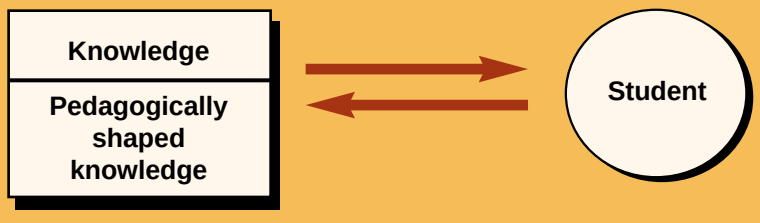
Pedagogic Interaction - Model 5: Communication of teacher with everyone, with each group member



With this model, a basic question must be put forward: does this model truly allow for a two-way interaction and meaningful activation? In the mass school with a large number of students, this is very difficult to attain, but not impossible. The first possibility is to apply the expositive-questioning teaching which can provoke active listening and generate thinking activities in majority of students (difficult to confirm with certainty). The second possibility is to use some didactic aids, such as responders in programmed instruction, or personal computers for the management of the instructional process. The third approach is that all students have identical printed problems (questions) at their disposal, and that the teacher delicately guides them to a desired solution (later, from the collected papers can be checked whether all students took part in such problem solving). There are also other clever methods used by talented teachers, such as chained assignment of problems, and chained (relay) answering, etc.

The biggest problem of this model is its difficult implementation and that it requires a great creativity of teachers and their constant monitoring of every student reaction, and timely and adequate feedback reactions.

Pedagogic interaction - Model 6: Interaction between the student and knowledge or pedagogically formed knowledge



This model of pedagogic interaction has been directly derived from the nonlinear model of instructional process, previously described. It is by far the most similar to the Model 4, but also it could be different, if every single student is in interaction with some kind of knowledge. In the practice, the examples of this model are: when a student, or students independently investigate the reality (e.g. field botanical expedition) or when indi-

vidually or in groups react to some pedagogically designed knowledge (i.e. in precisely defined instructional situation).

Here the special form of interaction between students and knowledge is occurring, and sometimes an implicit hidden interaction with the teacher is possible, because the teacher is present through the design, and the conception of instructional situation (so that students can also explicate teacher involvement - as a partner, for instance in statements:" he/she has come up with such a tricky problem", etc.). In this model is present a specific form of pedagogic communication, the degree of student activation and the relevance of those activities can be substantial.

As it can be seen from this review, in the regular, mass school it is very difficult to preserve the interactivity of the instruction and at the same time involve a large number of students in intensive and meaningful (relevant) activities. Each of the described models in its own way, more or less, resolves some fundamental problems of instruction: interactivity and student activation.

For the process of planning of the ALT lessons (production of scenarios) and for the analysis of the ALT lessons, t*he potentials and limitations* of each described model of pedagogic interaction must be taken into careful consideration. Still, there is a possibility of clever combination of the offered models in different types of lessons and different phases of instructional process.

- IF A SINGLE STUDENT LEAVES YOUR CLASS LESS INTERESTED FOR YOUR COURSE OR LEARNING IN GENERAL, THEN YOU ARE GUILTY OF THE POOR EDUCATIONAL PRACTICE.

Nikos Katzantsakis

ACTIVITIES AND ROLES OF CHILDREN IN THE ALT LESSONS

When we speak about the instruction, the Active Learning Project has two clearly defined goals: a) to do everything in order for the instructional process to be what it should - an interactive process in the form of pedagogic interaction (the previous text was devoted to this issue); and b) to shift the focus of school work toward the learning process, as the key process on which educational effects depend.

Viewed from that angle, the core of this project is *the activities of the children* (more precisely: the activities of the ones who learn). That is why in the ALT the greatest attention has been devoted in particular to this key educational component, not only in the phase of planning of the ALT lesson (see: Production of Scenarios for the ALT Lesson), but also in the phase of analysis of planned and performed lessons (see: Sequential Analysis of the Performed Lessons).

The analysis of the ALT lessons (one lesson or a series or a block of lessons) should describe one essentially simple phenomenon - *what the children do in the course of instruction*. What the children do and how, or what they do not do, in fact determines the pedagogic and educational outcome of everything done at school.

Although what children do/don't do at school is a fundamental and simple fact, an objective analysis of children's activities is a highly professional job, for which there is no ready-made methodology. We will, for that reason, describe in this chapter some indicators (or aspects) of a genuine activation of children in the learning process. The indicators have intentionally been described separately in order to facilitate an analysis of the teaching done during lesson(s), although it is obvious that these indicators are closely interrelated within the overall teaching/learning process.

When using this outline, it is important constantly to bear in mind the following:

- not all the below listed indicators appear in each teaching unit (it depends on the nature of the subject, the purpose of the lesson, the objective of each teaching unit, etc.);
- the listed indicators do not always appear with the same frequency and for the same duration (that, too, depends on the nature of the subject and other factors);
- an analysis of a lesson(s) ought to show which indicators and which types of activities were evident, how many children participated in each activity, how long was each activity;
- after the analysis is made of what has been done, additional analysis should be made of the possibilities for making improvements in the plan for the lesson(s), with an aim of increasing the degree of the children's activity, i.e., achieving their greater independence, actively including as many children as possible in the activities, extending the duration of the activities which are the most meaningful and relevant in terms of the desired objectives;
- the basic thing to know when using this outline is that it is not any kind of a mold or a form to be filled out, but is designed only to serve as a reminder for an objective, constructive and creative critical analysis focused on determining the meaning of the children's activities during lesson(s), how relevant those activities are, and what their effects are.

Indicators of children's activities

1. Children's initiative is a clear indicator of children's activities

Children's initiative can be manifested in various ways and in different phases of the instructional process. That is why the attention should be focused on the following children's behavior which could be manifestations of the initiative:

- Explicit verbally stated suggestions;
- Spontaneously starting to work differently than planned (especially paying attention to barely visible non-verbal behavior showing initiative);
- Children point to difficulties in completing a task in the planned way and under given circumstances;

- Particularly paying attention to some original, unusual children reactions, to attempts and trials of problem solving, to symptomatic "mistakes" (i.e. what from the standpoint of an adult looks like a mistake, actually reveals original attempts of children to face the academic material and problems), which actually demonstrate teachers what should be changed in the manner of work;
- Initiative can refer to different activity components: which teaching or instructional material to be used (or not), organization of group work (division of roles, etc.), what is being done, to ask teachers to join the independent work of children, to clarify the instructions for work, making tasks more specific, how to present individual or group work, etc.

It is extremely important how the teacher deals with the children's initiative, and also all his/her reactions to an initiative should be evaluated whether they stimulate or hinder children's initiative.

2. Children's questions

Children's questions in the course of instruction are a special form of children's initiative. In particular the questions which are not reproductive and informative are the most positive index of children's thinking activation.

- Are questions asked during an activity? How often? How many children asked questions?
- Are they genuine or alleged questions, or questions aimed at drawing the teacher's attention or meeting his/her expectations?
- The nature of the questions: they seek an explanation (unknown words, explanations of concepts), they seek additional information, point to a problem (a child is aware of some contradiction and points out that something that the children have been told is not in line with his/her personal experience; makes a connection between two academic subject matters which are apart; asks questions about a possible application of the knowledge and skills gained in school, etc.).
- Teacher's reactions to the children's questions: (asks for a clarification of the question; asks sub-questions, rephrases the question (Did you think....so and so?); asks the child to answer the question; puts the question to the other children; provides information; gives an answer which indicates where to look for a solution; provides a complete answer).

3. Children decision making

The decision making is an act of will and independence of the subjects and in that sense is a valuable index of activity.

The decision making can occur in two different situations: a) a teacher intentionally makes such a plan of the lesson(s) that the children are placed in a situation, or a dilemma in which they will have to make a decision; b) when children spontaneously resort to decision making on what to do, how to do it and how to start a dialogue about it.

All kinds of behaviors demonstrating the decision making in both situations should be carefully registered: who makes the decision, the manner in which a decision was made (imposed or through discussions), dilemmas that exist in decision making, how well the chosen solution was supported, to which activity aspects the decision is referring (what to do, how to do it, or generally how something should be done). It is of special importance to accurately establish the degree of independence in the decision making on the part of children, and the extent of visible or covert conforming to teacher's attitudes.

4. Evaluative behavior of students

These are the evaluative behaviors of what is being done, and how it is being done in the course of instruction (or after the instruction), either for the person itself, or other students or a teacher.

Evaluative behaviors are a very good indicators of the student activities, because they demonstrate students' personal attitudes (which is rarely encountered in school): liking/disliking, evaluation of its meaning for children (is that interesting for them, or useful), through attitude evaluation the process of knowledge assimilation is revealed (i.e. connecting it with the personal experiences and making sense of it all).

The evaluative behaviors can emerge in the form of direct verbal or non-verbal behaviors: Value judgments, reviews and self-criticisms, the tides of excitement and disappointment, gestures of acceptance / non-acceptance, through drawings, etc. Especially important is to establish whether and how the evaluative judgments are justified.

In the each analysis, it should be established whether there are sequences in which it is explicitly asked from children to show their evaluation (some behavior, product, suggestion of what to do and how to do it, ranking of individuals and groups, and its justification). The evaluative behaviors can appear at any stage of the instructional process, or can be at the end of an instructional unit when the children are asked to perform an evaluation of that unit.

5. Emotional reactions

The emotional reactions are an indicator of a personal experience of what is happening in the course of instructional process. They are important as a general indicator of children's feelings, but also can be a direct indication of the activities relevant for what is being done in instruction, such as emotional and esthetic reactions to the works of art, intellectual emotions in the personal effort to find out something (the "a ha!" - experience, "eureka" experience etc.).

The emotional reactions can emerge in the form of verbalization of emotional experience, and even more often in the form of non-verbal behavior (face expressions, glow in the eyes, excitement, emotional tone of voice, singing) or in the form of products (a drawing, etc.).

6. Psychomotor reactions

The psychomotor reactions can emerge in the form of gestures, small drama plays, rituals, dance, imitations, body posture (tense or relaxed), graphomotor activities, etc.

These reaction speak about the general experiencing of the instructional process on the part of children, but also can be quite relevant indication of active participation in instruction, when they are the means for non-verbal, gesture, dance, and dramatic expression for which young people show a great affinity.

7. Products of activities

The products of activities are the most certain and the longest lasting indicators and a proof that an activity has occurred. That is why it is necessary to analyze the frequency of their occurrence, their nature, and a connection with participants' activities in the process of learning.

It is necessary to establish:

- are children producing any products during an activity, either as a product of a particular phase or a final product;
- if they are, which kinds of products are they: individual or group, a joint text, a drawing, a model, an object, a report, a scheme, a bill/poster, a written summary of a joint activity, etc.;
- who made the product(s); individual students, groups, the entire class or in collaboration with the teacher;
- what is done with the product(s) during a lesson: presented before the class (group), compared, critically analyzed and constructively improved, put to a pro and con discussion;
- what is done with the product(s) after the lesson (block of lessons): nothing, authors get to keep them, are stored for later use, are displayed, are publicly presented outside of the group in which they were made, are displayed in the classroom or elsewhere in the school, are published or in some other way made accessible to the general public, exhibited in a visible place and used in instruction.

8. Characteristics /relevance of activities

This is the key indicator of an activity, since the objective of active teaching/learning is not to develop just any activity but an activity which is relevant, specific and significant for the academic subject matter, for which the activity was initiated in the first place.

That means that the nature of an activity is of the greatest importance. In other words, every activity must be in accordance with the nature of the specific academic content of a school subject which is being covered. The curricular contents and objectives of a block of lessons determine the nature of the activity. Math calls for specific mathematical activities, Literature for literary or literary-critical activities, Art for artistic activities, etc.

This indicator is the key criterion for evaluation of whether the principles of Active Learning/Teaching have been applied. However, departures from the relevance of activity rule are quite justified, are evident in practice and should appear in at least three forms:

1) in every active teaching/learning we have warming up activities, the breaking of ice, breaks, relaxation, humor, etc., since they are conducive to a positive general atmosphere;
2) the linking of activities in different school subjects can in fact be set as the objective of a particular segment in teaching (Art and Math, Geography and History, Physics and Math, etc.). In such case, the very aim is the integration of the knowledge, so that the activities, themselves, can be either those which are important for two or more school subjects, are on a borderline, or link different school subjects;
3) there are forms of general intellectual activities such as: the finding of information on one's own, knowing how to use different sources of information, knowing how to pursue an argumented dialogue, knowing how to critically read a text and make excerpts, the production of a comprehensive text, etc. These forms of activities will be used in practically all school subjects. It is through them that the general techniques of learning and general techniques of intellectual work are adopted, and they should, therefore, be stimulated in all school subjects.

If we use X to mark the material which is being covered (for instance, one school subject), the indicators of the specific relevant student activities in a particular area would be:

- mobilizing of the existing knowledge and experiences of relevance to X;
- independent finding of information of relevance to X;
- interrelating of the knowledge in X (one's experiences in X, earlier acquired school knowledge in X, knowledge in X and related school subjects, etc.);
- practicing of skills/ procedures/ methods/ techniques specific for X;
- individual work on texts in X (an effort to understand the text, to see what is not clear or is not known, to ask questions, try to establish a connection, etc.);
- application of knowledge in X (considering possible application in other subjects, in everyday affairs, practicing such an application);
- free thinking (including brainstorming) and research in connection with the given problems in X;
- asking questions of relevance to X, opening of problems (voicing of doubts, disputing of a particular knowledge because a child's experience tells him/her something different);
- role playing (choosing whether to be for or against a specific viewpoint in X);
- argumented discussion about problems in X;
- producing of a text or some other product in X;
- critical and evaluative views on some problems in X and an explanation of this view;
- forming of a personal attitude and determining of a personal meaning of a knowledge in X for a particular child (questioning of the relevance and meaning of a particular knowledge to a child and his/her environment, a possible personal application of a particular knowledge or skill, questioning whether a particular knowledge has any meaning for the child (reactions of the type: "Why do I need this at all?").

All these forms of children activation in the teaching process take place as part of instructional process, as a pedagogic interaction, i.e., as a shared activity with the teacher, (as the more competent partner) and the child/student.

9. Independence of children in activities

When a teacher with his/her plan of the instruction (a lesson, or blocks of lessons) puts children in the position to start the activities - how does he/she behave subsequently:

- gives an absolutely free hand to the children (within the framework of the given conditions and assignments);

- continuously monitors the activity of the children (gives his/her own instructions and orders);
- asks stimulating questions and provides other challenges;
- gives the children the freedom but continuously follows and analyzes what they are doing, and once the activity is over discusses things with the children;
- interrupts the activities which are not in line with his/her idea (with or without an explanation);
- responds to the children's demands (enters discussions with them, provides suggestions, discusses raised initiatives).

Thus, in the analysis of children's activities in instruction an actual degree of children's independence should be determined in such a way as to attach one of the following statements to each activity observed during the instruction:

- completely independent and started at children's own initiative;
- is activated at the initiative of the teacher, but is independent from then on;
- based on a model shown by the teacher;
- there is a continuous cooperation (pedagogic two-way interaction of children and a teacher).

With the aim of understanding children's independent activities make sure to see the text *"Participation of Children/Students"*.

10. Children's interaction

This is a clear indicator of children's activities and the shared activities and interactions of children as an important aspect of pedagogic communication, with specific educational functions (fostering social and communicative abilities, the ability for cooperation and team work, ability for resolving conflicts in a group).

Therefore, it is important to analyze each model of instruction according to the following indicators of children's interaction:

- Does a conception of a lesson unavoidably lead to interaction among children (either collaboration or confrontation) or does it insist on individual activities?
- If an interaction hasn't been planned in the lesson plan, how does a teacher react to spontaneous interaction (a child comments or asks questions, etc.): cuts short such attempts, accepts them and organizes further interaction and exchange, etc.
- If interaction and exchange among the children are planned and constitute the core of the lesson's idea, which forms of inter-action and exchange predominate:

  - exchange;
  - collaboration, complementarity;
  - confrontation and intellectual conflict;
  - argumented dialogue (discussions, debates);
  - playing of roles, and rotation in those roles;
  - initiative from one group of children and response from another group;
  - joint decision-making, coupled with a discussion;
  - joint definition of a viewpoint;
  - joint carrying out of actions;
  - making of joint products (text, drawing, model, composition, etc.);
  - division of roles in a joint activity;
  - competition, rivalry of ones against the others;
  - organizing/structuring of a group (team) and collaboration within that group (team), coupled with competition with another group (team).

11. General group atmosphere

A general psychological atmosphere in a group during the instructional process can be an indirect and a direct indicator of the degree and quality of children's activities. In order to demonstrate this claim, just remember occasional dead silence in the class in the situation where this silence hasn't been imposed, but represents great concentration on the part of children, or this so characteristic murmur during the group work.

Even though it is not easy to evaluate general atmosphere in the analysis a special attention should be paid to objective indicators of that atmosphere:

- What is the overall emotional tone while the work is being done: positive/negative moods, interest/indifference on the part of the children?
- Which are the predominating relationships among the children (collaboration, competitiveness, clever combination of collaboration and competitiveness, constructive or critical relationships, relationship of constructive collaboration within a group and a rival relationship among groups, leadership, etc.)?
- Which is the predominating emotional tone in relations between the teacher and the children?
- Are children given an opportunity at the end of an activity to tell about how they have experienced the lesson(s) (how they felt, what they liked, was it interesting for them, did they learn something, what do they suggest that be changed)?

We urge a new schedule of lessons, one that would, instead of a monotonous repetition of the subjects, tell and promise the children something concrete, interesting, provocative.

Lets not have Biology, English, Math, Serbo-Croatian, Art, Music, History, let's have an interestingly formulated topic for each future lesson.

If we so solemnly swear that nothing is more important to us than the active participation of children in lesson, if we truly and sincerely want the children to think and to understand more and to learn by heart less, we must look for concrete and effective ways to animate the children, to arouse their interest and to activate them.

Dusan Radovic

SCENARIO FOR THE ANALYSIS OF TEXT "ACTIVITIES AND ROLES OF CHILDREN IN THE ALT INTSRUCTION"

First step: text reading

Please, go to page 150 in your Manuals where you can find the text "Activities and Roles of Children in the Active Teaching/Learning". This text will serve as a "measuring instrument" for the analysis of scenarios and active lessons. Please, read it carefully, and note down all comments that you might have: remarks, questions, dilemmas. You have 15 minutes for reading.

Second step: discussion about the text (comments)

First, let's see if there are any unclear things in the text, do you have any suggestions, questions, comments?

The aim of this step is to clarify all eventual ambiguity, dilemmas faced by the participants about the text, and to have them discussed at a group level.

Third step: analysis of the activity indicators

1. *You have seen which indicators, pointers of children's activities and roles have been mentioned in this text* (Activities and roles of children in the active teaching/learning). *Do you have an impression that an important indicator has been left out, not mentioned in the text?*

If the participants suggest a new indicator, they should be asked to explain why it should be added, if there aren't any new indicators, the next question should be immediately put forward.

2. *In the regular instruction, is there room for these indicators? Where do you see this room: in which classes, within the framework of which academic subject, what form of activity, at what age?*

The aim of this question is to lead the participants to cross parameters such as: the form of activity, curricular/extracurricular, type of lesson, kind of subject, age of children, with the indicators of children's activity found in the text (initiative, independence, decision making). The sub questions could be asked - discussion points - such as:

- How much room is left for children's initiative in the regular instruction? When and how is that room provided?
- When, in which aspects of instructional situation are the children independent?
- What kind of decisions are children able to make during the regular lessons? Let's try to bring up all situations in the regular instruction where children are in position to make a decision.
- When are children in position to ask teacher questions in the course of regular instruction?

3. *During a single lesson can all indicators discussed in the text be represented? Why?*

In the course of discussion, a question why, can be combined with the question should all indicators be represented during a single lesson. I the discussion, the following things should be emphasized: firstly, not all indicators should be represented in every scenario or in the actual lesson, and they shouldn't be presented to the same degree (that will depend on the goal, what do we want to accomplish with each instructional situation); and secondly, that these indicators (relevance of activity, initiative, independence, decision making…) are the key criterion for evaluation of the quality of instructional situation. The criterion for the successfulness of a scenario, or a lesson is how are

these indicators integrated into the scenario (are they a natural, a logical part of it, or have they just been *grafted*) and how do we control them (construction of a situation, verbal demand, some kind of observation, following).

4. *If you had to give up some indicator of children's activity, to discard it, which would it be? Why?*

5. *Please, be kind enough to single out the three most important indicators of the mentioned ones, according to your opinion. The first rank will be occupied by the one that you in a group consider to be the most important. You have five minutes at your disposal for the ranking.*

When they are finished with their work, all ranks should be listed and noted (the discussion facilitator notes on the board the results of ranking - standings the same as in ranking the teacher roles). Afterwards, with the whole group the first rank should be discussed: state the arguments why they've chosen this indicator as their first, are there any arguments against that opinion. The discussion should be led in such a way (if possible) as to conclude that the key indicator is the relevance of an activity . In the case that no one of the participants has put this in the first position, the facilitator should explain why the relevance of the activity is the most important indicator of children's endeavors.

- THE CHILDREN ARE NOT UNSUCCESSFUL BECAUSE OF THE CURRICULUM. THEY CAN LEARN ALMOST ANY MATERIAL WHEN METHODS AND APPROACHES SUITABLE TO THEIR LEARNING STYLE ARE APPLIED.

Rita Dunn, Ph.D.

TEACHERS' PEDAGOGIC INTERVENTIONS IN THE ALT INSTRUCTION

Even in modern interactive forms of instruction, a teacher has the key position, but the roles he/she plays are changing (see *Inventory of Teacher Roles, and Professional Development of Teachers and Active Learning*). The main shift of the roles is toward the role of an organizer and a director of the instructional process (especially in designing and production of new types of instructional situations), as well as the role of a partner of children/students in pedagogic interaction (see: *Pedagogic Interaction: Interdependence of Student and Teacher Activities*). This way, the process of learning is becoming central to the school work, in particular through the interactive and active forms of teaching/learning (see: *Methods of Learning/Teaching*).

Of course, the forms of teachers' pedagogic interventions are quite diverse in different models of pedagogic interaction. For the scenario analysis and the analysis of the performed ALT instruction, the teachers' pedagogic intervention will be seen from a special angle: *the potential of various types of pedagogic interventions for initiating activity of children/students*. More accurately, this means that we are investigating to which degree do pedagogic interventions of teachers influence the involvement of almost all children in meaningful and relevant activities in practically all sequences of active learning forms. In the analysis, it is important to take into consideration the quantitative aspects of pedagogic intervention as well (described as six models in: *Pedagogic interaction: interdependence of student activities and teacher activities*).

For accomplishing the goal (adequate activation of children as much as possible) it is very important that the teacher avoids manipulating children, i.e. to avoid "fingering" of independence (deceiving independence). If the children are given an opportunity to do something on their own, then this independence must be respected, i.e. what the children are expressing must be accepted, and they shouldn't be nudged into something that the teachers thinks or wants. For instance, if the children are allowed to ask questions about some material, then all of their questions must be accepted, even the ones that are not to teacher's liking. Of course, the teacher has the right to voice his opinion about those questions and to justify it, but he doesn't have the right to forbid or censor some questions. This also applies to children's conclusions and solutions.

From the point of pedagogic interaction and teachers' roles, in that interaction all *forms of student activities* should be linked to *the types of interventions* (actions) of teachers. Each of the types of interventions has a different potential (possibility) for initiating, encouraging and maintaining student activities.

The possible types of interventions are:

a) *Transmission* (of ready-made knowledge, patterns of behavior), demonstration of a skill, providing of ready-made and final answers, etc., which then serve as a basis for children's independent activity;
b) *Creating of situations* for the children's activity (creating of an atmosphere for questions to be freely asked and views freely exchanged, assigning of problems, activating of a child's earlier gained knowledge and experience, providing of didactic materials, issuing of challenging instructions, taking children into a new environment which is relevant for what they will be studying, etc.);
c) *Stimulating of children during activity* (answering of children's questions by rephrasing of the same questions; a child asks the other children a question; asking provocative questions; providing counter examples; giving reminders of what is in collision with the conclusion reached by the children; instructing the children about new sources of information; pointing out contradictions in the children's views; stimulating the children to seek a solution together; the teacher participates as a partner in a concerted effort to resolve a problem; the teacher creates situations in which the children must chose or make a decision; the teacher offers dilemmas for the children to resolve, etc. - the teacher plays the role of partner in the pedagogic interaction, a partner who is open, responsive to children's thinking, and who rather stimulates than provides the answers);
d) *Accepting children's independence and initiatives* (directly or altered with an explanation provided); respecting of independent efforts on the part of the children (even if incorrect from a teacher's viewpoint); serious efforts to resolve errors in a child's knowledge and thinking; recognizing the right to a mistake, as a sign that

a child is making an independent effort at thinking; recognition of original and divergent types of reactions, etc.;

e) *Enabling a direct interaction between the children and knowledge/object of knowledge* (see: *Pedagogic Interaction: Interdependence of Student and Teacher Activities*): when this form of pedagogic interaction has been carefully planned, it contains the greatest potential for children activation, because it stimulates independent children's investigations (observing and investigating in the nature, investigative activities and experimentation in the laboratory, library search through independent use of information searches and their selective usage, Internet search when possible, etc.);

f) *Reacting to children's questions and children's evaluative behavior and children's activities* (and to the signs of personal child's reactions) is a kind of teachers' behavior to which the children/student's reactions will be especially sensitive, because those behaviors carry a very personal marking, quite emotional for children; thus a responsive and delicate teacher behavior can also create a general psychological atmosphere of respecting children, while emphasizing the importance of children's personal contribution (do not rush with providing ready and final answers to a question, but return it to children, because every, even the smallest individual effort, and every little bit that a child brings into the learning process stimulates the formation of a personal attitude, and encourages children to take it and defend it; the products of children's activities should be kept and subsequently used, etc.).

SCENARIO FOR FACILITATION OF SITUATION *"SCENARIO ANALYSIS FOR THE ALT LESSONS"*

Objective:

The objective of this situation is for seminar participants to be trained and practiced at:

- the analysis of the planned instructional situation before its practical implementation. (This analysis includes the enabling of participants to recognize the essential, key idea of that instructional situation, the children's activities initiated by that situation, to appraise the relevance of the initiated activities from the standpoint of academic subject, to determine whether the planned goals of that instructional situation can be realized with the planned children's activities.)
- self-evaluation, i.e. for determining how successful is a principal solution for the planned instructional situation, what are the possible problems, how can those problems be solved, how to finalize the initial idea to make it more efficient and in accordance with the preset lesson goal and the nature of the academic subject.
- writing of a scenario for the instructional situation, i.e. by analyzing the written scenarios the participants identify typical problems, critical points, such as formulating the goals (e.g., the tendency to mention as many goals as possible, however they are not linked to the activities for the given lesson, they've been grafted to the scenario, or inadequately formulated; the tendency to write a scenario from the viewpoint of a teacher, not to clearly see what do we expect of children to do in a particular part).

Materials:

- Prepare as many scenarios as there are groups (the scenarios must be copied so that each participant has own copy of his/her group scenario, as well as an additional copy of all other scenarios, + one copy for the facilitator);
- Poster - reminders for the analysis; CCA (critical - constructive - analysis) and the basic elements for the analysis of the written scenario (the key idea - activities of children - relevance of the activities - connection of the goal and activity - correction and elaboration);
- Paper for writing.

The course of work:

Division into groups:

Participants can be divided into groups randomly or purposefully, as decided by a seminar facilitator (e.g. all Serbian language teachers should analyze a scenario for instruction of Serbian).

Instructions for work:

In the situation that follows, we will practice critical, constructive analysis of the planned instructional situation, i.e. the written lesson scenario. This is the first evaluation and analysis of that outline, planned lesson, before it is practically implemented. This is a very important stage, especially because of its economical nature, so that the lesson outline should be clarified at the level of a plan, paper level, and only after it should be tried out in the classroom. When you become more skilled at the scenario analysis, you will see that may things can be predicted and fixed at this stage. We can say that the function of this analysis is to be a final test, a final clearing before decision is made to implement this lesson in front of the children.

Let's see how are we going to proceed! Each group will receive one lesson scenario that should be analyzed. Additionally, you will also receive a copy of other groups' scenarios, in order to follow the analyses of various lessons, and actively participate in them.

Let us remind you that we are analyzing the lesson outline, the possibilities and a scope of the presented idea, and not its author. Therefore, we are trying to see how successfully this idea can contribute to the accomplishment of set goals, how economical it is, and its effects. We are repeating that we are dealing with an analysis, not a general impression (good-bad, like-dislike), but an analysis according to the following parameters.

The parameters for the analysis are (point to the poster-reminder):

- THE KEY IDEA, i.e. What is the basic design, an idea of the instructional situation;
- CHILDREN'S ACTIVITIES, i.e. Which children's activities have been initiated by this instructional situation (what children actually do);
- RELEVANCE OF THE ACTIVITIES, are the children's activities relevant for that academic subject (e.g. are children involved in activities relevant for math teaching/learning , if we are speaking about the mathematics lesson);
- INTEGRATION OF THE LESSON'S GOAL AND CHILDREN'S ACTIVITIES, i.e. is it possible to achieve the planned goals of the lesson with the activities and their implementation;
- CORRECTION AND ELABORATION, i.e. how can this idea be fixed, elaborated in order to be more efficient and better (should some parts be removed, some parts processed differently, completed, and altered, etc.). The aim of this analysis point is to see whether it is possible to realize the planned goals with that initial idea (when developed and realized); it can happen sometimes that the design itself, even when best realized can not efficiently fulfill the predetermined goals, but then we speak about the limitations of that idea, and not the person who tests it.

Please, work together and at the group level analyze your scenario according to the given parameters and prepare your presentation. You have 30 minutes to complete this task.

Note: If in the course of scenario analysis, the participants start to develop their own ideas for the given lesson, they should be returned to analyze the author's idea first, to try to finalize it, and only then they should be given an opportunity to express their alternative solutions. It should be emphasized that if there were no time limitations, their ideas could also be analyzed according to the given parameters, and see which parts do they solve, which parts of the scenario do they fix, and which new problems are opened.

Group work summary

Before groups start with the presentation of their observations, if the scenario author is present, he/she can clarify some parts, but without a detailed or extensive description of a lesson. The author of the scenario may be given an additional opportunity to comment on some observations at the end of the analysis.

One after another, the groups present the results of their analysis, but following the given parameters. While analyzing a single parameter, all participants, except the group members can join in and comment it (e.g. when the group presents its key idea, the others may be asked to express their opinion; when the group lists the children's activities, the others are asked whether they agree, are there any comments, and so on).

When the analysis of the first scenario is completed, the facilitator should make a summary of observations and move on to the next scenario. In this manner all groups are given a chance to participate and all scenarios are covered.

Discussion

In the course of the discussion the facilitator makes sure that what is being really analyzed is the idea of a lesson, its intrinsic coherence and not its author, that the analyses are not general, but specific, while insisting on the precision in speaking (e.g. is that written in the scenario, where, do we assume that the author has thought so, but we actually do not know for sure, etc.).

The central part of the discussion of a certain scenario is the relevance of children's activities. Here, inevitably two types of relevance will appear: generally intellectual and a specific one for an academic subject. Of course the generally intellectual one is necessary, but as a "tool " for performing the activities relevant for the specific academic subject (e.g. using of a prepared literature - if this is not a goal of the lesson , training children how to work with the literature, how to extract the important parts, then we deal with the general intellectual skill, and not a specific skill for a particular academic subject). In the course of child's development, these general intellectual skills have been specific at a certain

moment (learning how to handle a pencil, reading, writing, coloring, calculating), but later on they've become a "tool" for the realization of the activities specific for a certain subject.

In the course of a discussion it is necessary that the facilitator extracts lesson sequences, so that clearly and precisely the following will be obtained: is a certain sequence unneeded, or not well enough realized (e.g. in the concrete scenario, is it necessary to exclude the sequence psychological-emotional preparation for the lesson, or change the way of performing this preparation). The emphasizing of the lesson sequences (introduction, giving instructions, group work, etc.) is a very important preparation for the sequential analysis: participants' attention is drawn to each sequence, its function, activities in the sequence, their relevance from the standpoint of the sequence and the entire lesson, as well as the incorporation of different sequences into the lesson design.

In the course of the discussion, two elements are required to be mentioned: that by doing this a teacher is trained for individual lesson analysis (and based on a good diagnosis, he/she can efficiently finalize the lesson, see what is necessary to be changed), *for self-evaluation and improvement* of their work (obtain a precise idea how to modify and improve lesson's idea); as well as another point, *the importance of cooperation and team work* - that it is very important that the teachers together with their colleagues analyze their lessons, perhaps even perform them together (as in the ALT seminar). Ideally, supervisors and teachers would analyze the lesson together and finalize it as a joint project.

- AN ILLITERATE PERSON IN THE YEAR 2000, IS NOT A PERSON WHO CAN NOT READ OR WRITE, BUT A PERSON WHO DOESN'T KNOW HOW TO STUDY, GIVES UP, AND LEARNS AGAIN.

Alvin Toffler

SEQUENTIAL ANALYSIS OF THE ACTIVE LESSONS

The sequential analysis is a method for analyzing pedagogic interactions, i.e. activities of teacher/student. The method has been developed for the purposes of the ALT project, but it could be applied for the analysis of any form of instruction. The sequentional analysis is the method that provides objectivity and reliability of the analysis (it enables the repetition of the analysis by independent observers), as well as the quantification (the number and a kind of student activation, the number of children involved in such activity, duration of each activity, and interaction of the number of children with the activity duration).

Essentially, the sequential analysis consists of a division of a certain entire teaching/learning activity into the smallest meaningful units called the **sequences**.

On the whole, each sequence of instructional activity has been defined by the following parameters:

a) sequence functions (e.g. transferring of new information on the part of teacher, student independent problem solving, creative production, small group discussions, presentation of the group work results, etc.);
b) type of interaction in each sequence (the lack of interaction, i.e. a one-way action teacher-the whole class, interaction teacher-one student, interaction within the group of students, interaction between groups, etc.);
c) activities and roles of children in the process of learning, i.e. the list of all forms of student activities in each sequence with quantification trials.

The basic criterion for the division of the entirety of instruction into sequences is the change of the kind of student activity (e.g. a transition from listening to the lecture to asking questions, transition from problem solving in a group to the public presentation of the results, etc.).

Therefore, we can emphasize several important accents of the sequential analysis:

1. It is the **analysis**.

Often, we speak about the analysis of the observed lesson, and by the analysis we mean our impressions and reactions to that lesson. In order to distinguish between the analysis as the method, and the impression, we came up with the sequential analysis. According to Vygotsky, two levels of analysis could be discussed: (a) the analysis of the elements (e.g. the analysis of atoms of hydrogen and oxygen in the chemical formula of water); and (b) the analysis of a unit which retained the characteristics of a meaningful unit, it hasn't been broken into pieces, making it impossible to recognize the whole (in the above mentioned example this would be the analysis of the water molecule, which retained all the characteristics of the water as a substance).

The sequential analysis refers to the analysis of units, not the elements. The unit of analysis must retain its attributes of the meaningful entity, characterized by a certain goal, particular requirement and unchanged nature of the required activity.

2. It is an **objective analysis.**

By applying the sequential analysis, we are trying to analyze the lesson in such a way, so that the analysis is objective and reliable (it could be repeated by different researchers), and not a subjective impression of the performed lesson. The parameters of sequential analysis are defined in such a way as to provide for this objective assessment.

3. It is a **quantitative analysis.**

When we speak about children's activities, the kinds of activities will be qualitatively analyzed (which, what kind, are they relevant for the academic subject and set lesson goals). But it is quite possible and necessary to perform a quantitative analysis as an important parameter of the successful realization of children's activities during a lesson.

Quantitatively we can analyze: (a) the number of active students (simple and precise counting how many of them actively participate in each sequence of the lesson); (b) Duration of the activity (how long the undertaken lasted). This opens the possibilities for combining these measures, so it may happen that the activities were relevant for the academic subject, well chosen, adapted to child's age, stimulating and interesting for children, still a small number of children were involved and they didn't last a long time.

The combination of the qualitative analysis and quantitative measures of the activities clearly determines how successfully we have activated children during a lesson.

4. It is a self-evaluation, auto evaluation, the author's independent evaluation of his/her own work.

The goal is to **enable teachers for independent evaluation of the quality of their work** with the help of sequential analysis. Therefore, to offer them an instrument for assessment and evaluation of their lesson, their work, and not to wait for the external review of an inspector or a supervisor. The aim of self-evaluation is improving and finalizing one's own ideas. Only if we are in possession of a precise feedback about what and how something has been done, we can make conclusions about our own efficiency and introduce changes, adjust developments of the initial idea.

With sequential analysis and additional field for theoretical analysis of the active lessons has been opened. By analyzing numerous lessons, and defining their sequences we have concluded that the number of the possible types of sequences that appear in the course of a lesson is limited. It appears that the number of sequence types can not be more than 15, i.e. the range is between 12-14 sequences. This would imply that each lesson is a combination of certain sequences. It is important to mention that the very number of sequence types does not determine the quality of the performed lesson, i.e. if there are more sequences present at a single lesson it does not automatically mean that this lesson is better than the one with fewer number of sequences.

If we continue to theoretically develop the initial idea, we could expect to arrive to the combination model of different types of sequences to be recommended for the realization of certain goals/types of lessons. In that case, we could create a new system, the way for lesson construction, and a new "instructional combining" of the meaningful elements (sequences). This challenging part of the instructional "periodical system of elements" is still in its development.

SCENARIO FOR FACILITATING A SITUATION "SEQUENTIAL ANALYSIS OF THE ACTIVE LESSONS"

Objective:

The goal of this situation is that the seminar participants:

- be trained and to practice the application of the **sequential analysis** (SEQA) - an original ALT method for the analysis of a lesson (at first they are guided, with the help of seminar facilitator);
- be trained and to practice self-evaluation, i.e. to independently evaluate the quality and the efficiency of the performed lesson, primarily from the viewpoint of roles and activities of children in a given instructional situation, and the connection of those activities with the set goal of the lesson;
- to develop sensibility and to refine the criteria for constructive, critical analysis of the roles and activities of children, for evaluation of the functionality of a certain sequence in the entirety of instructional situation, which will be useful later in the designing of their own lessons.

Materials:

- video recording of a performed lesson;
- the written scenario for the recorded lesson (a copy for each participant, or at least two copies for each group);
- poster-reminders for the analysis: CCA (critical-constructive-analysis) and what to watch during the viewing (the sequence boundaries, activities and roles of children in the each sequence, types of teacher interventions, good solutions, and problems);
- white paper and pencils for participants for noting their observations during the viewing;
- markers, and a large blank piece of paper for the facilitator to note the sequences.

The course of work

First instruction for viewing the video-recording.

In order for this step to fulfill its function, it is necessary to provide conditions in which all participants will be able to see the screen well enough. Therefore, the room should be organized in such a way that the audibility and visibility of the video recording is accessible to all participants.

The written scenario of a lesson to be analyzed is distributed to participants and they are given some time to go over it, to know the type of the lesson, its goals, and what is planned for it.

Now, we are going to watch a video-recording of a lesson for which you have just seen the scenario. Let's repeat, we are dealing with … (state the name of the lesson, instructional unit, class, type of lesson). First, we will watch the video-recording of that lesson, and later we will together perform a critical, constructive analysis and, a possible correction and elaboration.

Please, have papers and pens ready for noting down all important observation during the viewing. On this poster-reminder we have written (point to the large piece of paper with the written elements) the important features that should be recognized and identified during the viewing: boundaries of sequences and their duration, roles and activities of children in each sequence, types of teacher interventions, good solutions, and difficulties, problems left unresolved.

Therefore, we have several tasks: (1) it is important to recognize a starting and an ending point of a certain sequence, i.e. the part of the lesson constituting the smallest meaningful unit. Then, (2) to write down what exactly are the children doing in each sequence, so we are making a list of all children's activities in the course of a sequence, and (3) if present (the teacher interventions). In the course of viewing (4) note down all good solutions (e.g. well solved the integration of the group work, or successful motivation of students for the work), as well as all the problems which haven't been solved adequately.

Viewing of a video-recording

In the course of viewing the video-recording, it is important to assure participants' attention.[25]

[25] Due to the lack of equipment and professional experience in recording a lesson, the recording haven't been technically perfected enough. Because of this the sequential analysis should be performed in a smaller group of participants (10-20).

Division into groups

After the viewed lesson the participants are randomly divided into the smaller groups.

Analysis of the lesson in the small groups, summary of the group work and discussion

a) Before the start of the analysis itself, the facilitator calls on the participants to present their first impressions about the viewed lesson. These impressions can be formulated in a sentence, or a single word, association, adjective, or a feeling evoked by that lesson, etc. The impressions are written down on a large piece of paper. When the listing of impressions is over, the large piece of paper is put away for after the analysis. At the end of the lesson the first impressions will be compared with the quantitative evaluation of the lesson obtained by the analysis. from the standpoint of pedagogic effects of this training, it would be quite useful to demonstrate that the first impression and the final analysis are different: for example, a boring, uninspiring lesson is by the analysis demonstrated to be a lesson which covered all its goals, relevant for the instruction of academic subject, as a lesson which meaningfully activated the thinking in the majority of children for the longest time period, and vice versa: an active, dynamical lesson as observed by the participants, is shown to be ill-adapted for children, the one which does not realize the planned educational goals, pedagogically problematic, etc. when this happens, the participants quickly and easily become aware how the first and general impressions can be deceiving for the real pedagogic analysis of a lesson.

b) Afterwards, the participants are instructed to compare their observations within the group, or the solutions to all the tasks they've been soling during the viewing.

c) After fifteen to twenty minutes, we are starting a joint work, or a summary of group solutions and a discussion.

Two outlines of the further work are possible. The first outline calls for listing and defining of all sequences of the given lesson, and only later the analysis is performed on each of them. The second possible outline is to define the boundaries of the first sequence, and immediately perform the analysis of that sequence, .i.e. to proceed with the discussion on roles and activities of children and the types of teacher interventions in that first sequence. When the discussion about the first sequence is completely finished, then the boundaries are set for the second sequence, and then the second one is analyzed. Then the next one is analyzed, and so on.

The summary of the discussion of all the coming steps, the facilitator writes on a large piece of paper (one piece of paper for each sequence), using different colored markers for indicating the names of sequences, activities, especially the relevant activities of children, the good and bad sides of the actual sequence, etc.

- In summarizing the group work, we start from the defining of sequence boundaries. This is done in the following fashion: first the facilitator calls on a group to define the boundaries of the first sequence, and afterwards, the facilitator asks the other groups to voice their agreements or disagreements. In the course of the discussion and the exchange of arguments, the first sequence is being jointly defined, its boundaries, duration, and at the end it is given a name as well. From the discussion on boundaries and the name of a given sequence, the facilitator tries to arrive at general principles for defining sequences. At the same time, the facilitator points out to participants the importance of a special kind of sensitivity required by this analysis, which is a continuous focusing on the behavior and the activities of students (with the change of the activity, one sequence ends and another begins).
- When the boundaries of a sequence have been defined, the participants continue with the listing of children's activities, mentioning how children might be involved in each activity, as well as the duration of each activity.
- Frequently, there is a problem of defining the activities of children. The formulations are sometimes too general (e.g. problem solving), and sometimes too specific and detailed (e.g. a child is pouring substance A into substance B, and he follows the occurring reaction, writing his conclusions). It is difficult to give a precise instruction how to formulate children's activities, but it might be clearer if we say that it is necessary for someone who hasn't observed the lesson to understand

what is being done in the certain parts of the lesson (e.g. children in groups determine the genre of poems they had read).

- A joint analysis of the obtained list of activities follows. From the list of activities, the relevant activities are being highlighted through discussion. The facilitator defines a relevant activity once again, and points out the importance of such activities in the instructional process. In summarizing the group results and in the discussion that follows, the participants should become aware[26] that within the same lesson we can distinguish various types of relevance, that is characteristics of children's activities:

a) relevance from the aspect of sequence itself - if the **sequence itself** is used for motivating students, then the children's activities where this is observed ("play-like" introductory activities, solving riddles, discovering associations, or a mystery person) are relevant for that sequence;

b) relevance from the aspect of the **lesson's goal**, e.g. if the goal is vocabulary enrichment, then for that particular goal are specific those children's activities which lead to the goal accomplishment (independent finding of unknown words in a dictionary, searching for a root of certain words, expression of synonyms, homonyms);

c) relevance from the aspect of the **nature of academic subject**, which includes characteristics of the academic material itself, but also the characteristics of the procedures and the way of thinking in that academic discipline. In the instruction of chemistry, relevant will be those children's activities which replicate "in miniature" chemistry as a science: performing lab exercises, finding an element in the Periodical System of Elements table, testing the chemical laws, etc.

- After the analysis of the relevant activities, the facilitator directs participants' attention to the remaining activities from the list of activities in each sequence, that is the ones that the participants judged as not relevant. The discussion is opened about their significance: are they needed, if yes - why are they needed, what is their function, are there too many of them. The facilitator in the course of discussion emphasizes the difference between *general intellectual activities* (writing, reading, calculating), the ones that appear in every subject and that are necessary for further learning, and the *activities relevant for a certain academic subject*, which are the focus of our attention.
- The analysis of kinds, types and the timing of teacher interventions within each sequence follows: what did the teacher do (list of teacher activities), the duration of each teacher intervention within the sequence, which interventions were stimulating and activating, and which had an opposite effect, were this intervention timely or not.
- In summarizing the sequential analysis, the connection between the goal, contents and method in the given lesson is observed: The discussion is led around the following questions:
  - Have the planned goals of the lesson been accomplished?
  - Which sequences realize the planned goal?
  - Are more sequences involved in the realization of a single goal (thus we could conclude that the goal has a greater possibility of being accomplished), or is each sequence linked to a single goal?
  - Have some goals left "uncovered", that is not a single sequence realizes that goal?
  - Have some of the unintended goals been accomplished?
  - Does the chosen methods of work for an actual content provide the best possible realization of the preset goals?
  - What are the good sides of the observed lesson (within the particular sequences, and on the whole)?
  - What are the problems of the observed lesson (within the particular sequences, and on the whole)?
  - Are the lesson's problems an outcome of the idea, choice of methods, or immediate realization?
  - How could the observed lesson be finalized, but to remain within the framework of the original idea?

In facilitating the sequential analysis, the facilitator must continuously bear in mind the basic principle: constructive critical analysis. This means that the group must be carefully guided to deal with the observed instructional process, and not the teacher who conceived the lesson, whether he/she has been praised or criticized (see: *Some Useful Suggestions for the Seminar Facilitators* in the Appendix 4).

[26] and to further develop the skill by additional practicing of the analysis

B3. MODEL FOR EVALUATION WITHIN THE FRAMEWORK OF ALT

Our country is one of many countries that don't have a systemic evaluation of educational process and its effects, apart from the regular and quite superficial work of educational inspection and marking of student achievement on the part of teachers. The very neglect of the "evaluation culture", is a sufficient reason for a systemic incorporation of modern evaluation procedures, whenever there is a project of innovation of educational process. These procedures were developed especially in the last two decades in different countries and various international organizations specialized for the education and its evaluation (e.g.: OECD; a review system of educational systems in individual countries, the system of international indicators in education - INES, and program for international assessment of student achievement - PISA; UNESCO: the monitoring of learning achievement - MLA; the European Union: 16 indicators of educational quality; International Evaluation Association - IEA; International student achievement testing in math and science - TIMSS; European University Association: self-evaluation and evaluation of university institutions, etc.).

There are three key reasons that led to the rapid development of the educational evaluation systems: a) a need to introduce additional rationality (i.e. economical and pedagogic rationality) in educational sector; b) the interest of several groups and partners connected with education (the state, local community, various funds, parents, teachers, students)in order to receive a timely and objective information about the educational process and its effects); c) the essential need of the educational process to receive a feedback information about its functioning and the achieved results - which would serve as a sound basis for well established changes in the process itself.

All these general reasons are fully applicable to the innovative project Active Learning. From the very beginning of working on the project, they have influenced the incorporation of many evaluation mechanisms into the project. The authors of the project and project participants (schools and teachers) have a central need to continuously receive the information about the course of project implementation and its effects. However, no less interested for evaluation are the external factors in relation to the project, i.e. the ones who support and finance the project (Unicef, donor countries), as well as the Ministry of Education.

If the reasons for evaluation are more than clear, it is necessary to choose a model for evaluation, so to satisfy requirements of different partners participating in the project.

There are several general guidelines for developing each evaluation model.

Initially, the evaluation model should be completely *in accordance with the nature of the program phenomena* to be evaluated, and general goals of that program (project). Simply, if we deal with a project of complex nature, the evaluation should be able to reflect that, if the goal of the program is to improve school achievement, than this must be assessed, etc. If the programs are carried out on several levels (training of certain teachers, implementation in one school, an attempt of changes in the educational system, etc.), then the evaluation must be carried out on all those levels.

Additionally, it is currently a standard procedure to include several unavoidable questions for every evaluation: *what* is evaluated, *who* performs evaluation, *who* is the evaluation performed *for*, *how* is the evaluation performed (quantitative, qualitative, which methods and instruments are used), *why* is the evaluation performed (formative - summative evaluation).

All these general rules and procedures also determine the evaluation concept of the Active Learning/ Teaching project.

The first question asked when evaluating these programs that have as their goal changes of some aspect of social services (in the case of the ALT we deal with the attempt of changing the method of educational work in schools) is the evaluation of the program itself (theoretical concept of the program, its operationalization, the ideas how to implement such program in actual conditions). The adequate model for such evaluation is the *expert evaluation using qualitative methods of evaluation*. That procedure requires the engagement of experts of the highest rank (international), and it is indeed

expensive. UNICEF as the organization that supports the programs asks for carrying out of such evaluation.

The second question essential to evaluation of the Active Learning Project, which has as one of its main goals the change of teaching/learning methods in school, is the assessment whether the application of active methods assures better school achievements of the students. It is a very logical and legitimate requirement. However, by insisting only on this aspect would necessarily require for the project to be intensively implemented for a long time only in some classes, with the student effects studied subsequently.

This evaluation focus inevitably opens many significant questions, such as: what measures should be taken, and which conditions should be provided in order not to limit the project effects only to one generation of students in certain number of schools, subjects and classes, but to create a *basis for enduring changes which will generate positive, long lasting effects in larger population of students*.

This line of thinking led the project authors to develop a complex evaluation model that reflect the complex nature of the project.

There are two fundamental goals of the ALT project:

a) to change the way of knowledge production in schools (modernization of teaching/learning methods by introduction of interactive/participative/active methods);
b) to change the status of the child/student in the process of learning (child as an active partner in the knowledge construction).

These serious long-term goals can not be accomplished by one-time, short-term changes (direct training of children according to the specific way). First of all, it is necessary to accomplish the changes in the environment and institutions that would guarantee a *long-term sustainability of the positive changes of students' achievement in school*. Therefore, initially the structures capable of generating effects are created, and only after the effects are studied in certain segments of student population.

This line of thinking led to the creation of a two-dimensional evaluation model shown in Scheme 7.

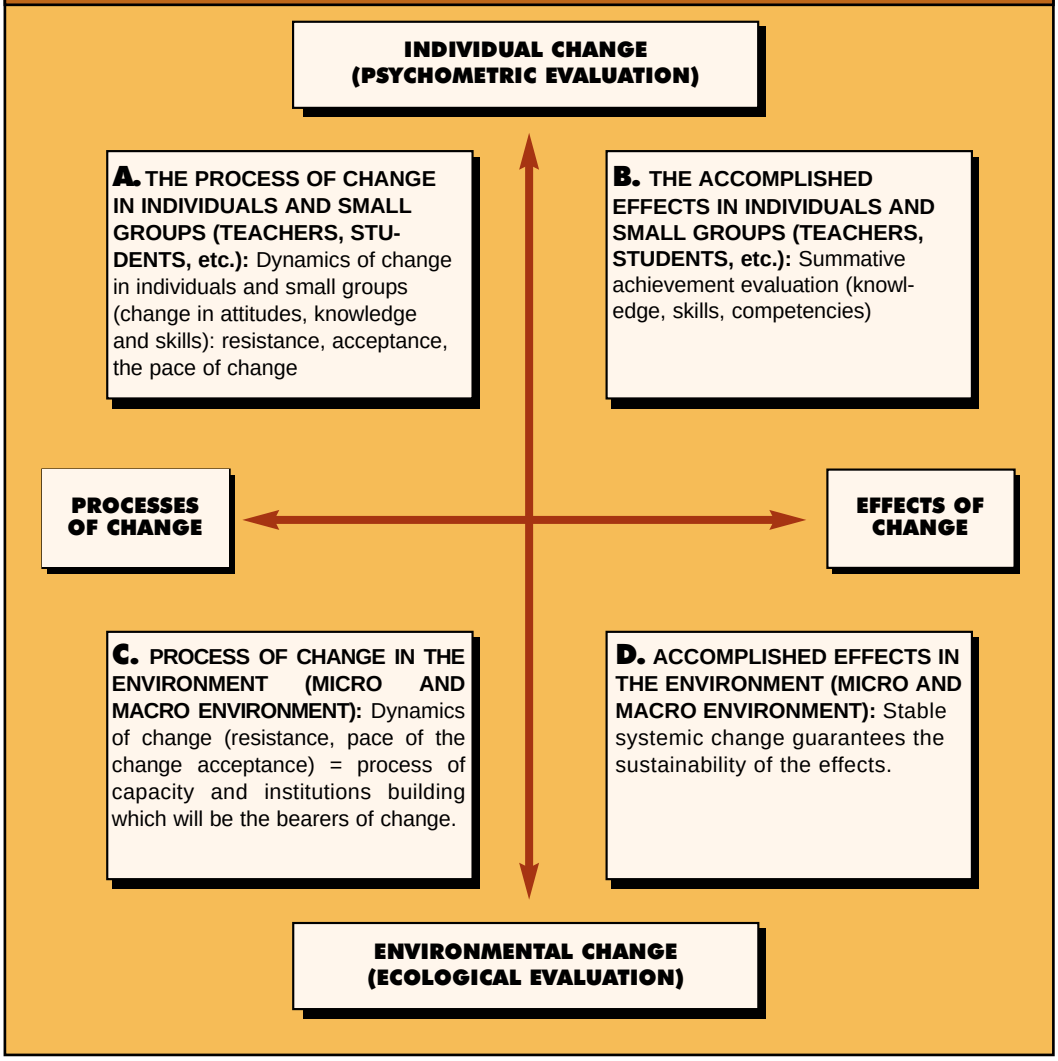
This kind of model allows for two kinds of evaluation:

a) Evaluation of the changes in the environment, which create conditions for the long-term generating of the planned positive effects. Here we talk about the bottom part of the scheme, fields C and D, which predict the evaluation of changes generated by the ALT. Here is dealt with the creation of the capacity building, institution building and systemic solutions, which would be a permanent basis for creating positive educational effects (producing lasting and high quality knowledge in students). These changes are not created over night, which makes the evaluation of processes of environmental changes necessary (field C), and afterwards the evaluation of stable achievement, environmental effects.
b) Evaluation of the change in individuals who are the project's outermost target group, especially in teachers and students (fields A and B). When we talk about the teachers, we deal with the changes in their professional competencies, such as competence in the modern interactive/participative/active methods of teaching/learning, understanding of the nature of pedagogical interaction, learning process and active role of the child in that process, as well as the formation of the new practical skills and work techniques. When we talk about the students, then we deal with significant effects such as motivation for learning, stable, enduring and applicable knowledge and skills, individual autonomy, value systems, etc.

Since here we don't deal with the one-time actions and short-term effects, it is necessary to perform evaluation of the *processes of change in individuals and small groups* (field A), but also of the *accomplished effects* (field B).

If we bear in mind all aspects of this two-dimensional model, then it is clear that here we don't deal with the simple pedagogic experiment of limited scope, to create desired educational effects (increase and improvement of the school achievement quality) in the part of the population.

Scheme 7: Two-dimensional model for evaluation within the ALT project



Actually, here we deal with an extensive social program which strives to produce sustainable changes in the large number of institutions (individual schools, schools for teacher education, changes in educational establishment, changes in the practice of educational inspection, changes in the system of in-service teacher training, changes in professional associations, etc.), or even to create some new institutions such as model-schools (i.e. schools - regional centers for active learning) or centers for the development of active learning, associations of schools and teachers who apply principles of the active school.

On the other hand, it means that the project is trying to generate some significant changes in one profession, i.e. changes in professional behavior of great many members of that profession. All these changes in institutions and individuals should create stable conditions for the ultimate project users - the students to receive high quality and efficient education.

Due to the fact that we deal with such an extensive social action, the common issues of resistance to change are encountered. Some issues are raised about the reasons for numerous institutions, and even greater number of individuals why to change their usual behavior, there are questions of endangering interests of particular groups and individuals, the questions of possible pace of change in the actual conditions. The offered model of evaluation should enable clear identification of these problems, precise establishment of resistance, identification of available resources that support changes, establishment of the dynamics of change and the effects accomplished in the certain phases of practical implementation of the project.

With the aim of more precise insights into of all aspects of evaluation that have to answer these basic questions, we will explicitly analyze the specific evaluation problems in dimensions of the ALT project. This detailed analysis will follow the presented Scheme 7, (fields A, B, C, D) so that for each specific form of evaluation (in each of four fields of evaluation) the following would be determined: what are the variables to be evaluated, the population to be evaluated, the adequate model of evaluation, the kind of evaluation tools and mode of evaluation to be used.

1. Process of environmental change (field C)

The entire process of change that the ALT project intends to generate, starts here. This process is characterized by efforts to initiate and maintain the process of capacity building and institutions building and the search for systemic solutions.

This process comprises of the following components:

A system of training seminars for project participants (see: *Various types of training for implementation of the ALT Ideas*)

Evaluation includes:

- Collection of the quantitative data on the scope of training (the number of different types of the seminar, the number of participants from individual schools and regions, division of participants according to school subjects, including class teaching, the number of participants taking part in activities after the basic seminar, and especially the number of teachers trying to apply what they have learned, the number and the quality of produced scenarios and performed lessons, etc.). The adequate procedure for this kind of evaluation is creation of computerized database, and analysis and management of data from that database.
- Research of teacher reactions to the project ideas in the form of questionnaires for the seminar participants (their attitudes, estimation of usefulness for the teaching practice, etc.). This kind of evaluation is frequently practiced. Even more important is the evaluation of the actual participants' behavior following the training: further training, attempts of application in the practice (how many, their quality). This kind of evaluation should be in the core of analysis of the *project acceptance process*.

Creation of the N30+school network (i.e. model school - school regional center for the development and extension of the project).

The basic sources of information of this aspect of project implementation process are the schools themselves and the objective quantitative data about the functioning process of those schools: the number of schools, the number of schools excluded from the network, quantitative data on the project activities in each school (the number of trained teachers, the number of attempts of practical implementation and quality of those attempts, quantitative data on the extension of the project within the region (the number of schools and teachers included in the project, the number of schools not showing interest to participate in the project). Here is also the main activity the creation of the database as a basis for permanent analysis of the extension and project implementation processes.

A specific aspect of the capacity building at this level is *actual networking*: does the network as an organized structure really exist, what can be evaluated by using two kinds of indicators: database on the specific schools, individual project participants, and their production (scenarios, collections of scenarios, video recordings of active lessons) and the functioning of the network (the intensity of exchange among the network members). This kind of developing network should be one of the most powerful institutionalized means for the sustainability of the project and its practical implementation.

The training of facilitators for Active Learning/Teaching.

This is the main human resource for the extension and development of the project. The evaluation of this resource is based on the following indicators: the total number of facilitators, the type and level of completed training (starting with the basic seminars onward), quantitative data on their cooperation with other project participants (teachers, inspectors, principals), products created alone or in cooperation with others, the quality of their work assessed in the form of portfolio containing their achievement, evaluation of their training activities which can be found at the Institute of Psychology as a professional institution supervising the project.

The process of development of teacher associations for Active Teaching/Learning.

This is a very important step in the creation of human resources, as permanent bearers of the project activities. The associations can be formed at the level of schools, regions, or the entire country.

Indicators of this developmental aspect are: the number of such associations and objective indicator of their activity (meetings, publications, scenario and video-recordings exchange).

Creation of specialized institutions for extension and development of Active Teaching/Learning.

Here we talk about the institutions such as existing associations of teachers and other professional associations, which decided to devote one part of their activities to implementation of the ALT project in the centers for professional training in particular school subjects - for instance the creation of such center at the Faculty of Chemistry, University of Belgrade.

This would include institutionalized solutions, such as introduction of the university courses for initial teacher education. The first steps in that direction have been already made at the University of Tbilisi, and teaching department of the Faculty of Chemistry in Belgrade, and some initiative have been observed at the Teacher Training College in Belgrade.

Attitudes toward the Active Learning/Teaching project among educational public opinion, educational establishment and some educational institutions.

These attitudes (resistance, dilemmas, acceptance) are very important because they could be either points of significant resistance or support to the project.

Indicators for evaluation of these attitudes are texts in educational journals and presentations at professional and scientific conferences (reviews, analysis). The main method used is the content analysis of the document in time series in order to establish the dynamics of change in those institutions. The main problem is that the public appearances of that kind are very rare, especially reactions of the resistance remain outside of the public professional scene.

A very useful form of evaluation would be well prepared public debates of the supporters and opponents of the active learning. The authors and project participants have always stated the will to participate in such debates and the invitation is always open.

Attitudes and the behavior of educational authorities

This aspect of capacity building and a system building for development of the ALT project is of key importance because of the power of authorities in creation of systemic endorsement of practical implementation of the project (or the lack of it). Evaluation of dynamics of attitude change and the behavior of those bodies (depending on political factors) is important for assessment of the sustainability of the project effects.

Indicators for evaluation of this aspect of capacity building are: building of systemic measures (especially of the system for in-service teacher training or building the system for professional teacher development), the support for schools participating in the project, official accreditation of this project, degree of cooperation with the organization supporting the project (first of all, UNICEF).

Attitudes of the general public

Information about the project, attitudes and attitude change of the general public are a general framework (favorable or unfavorable) for practical implementation of the project, since they can influence attitudes of parents.

Indicators for this variable are: the number, frequency and the content of writings in printed media and TV shows in electronic media, and the basic method is content analysis of those messages.

At the end of this paragraph it is important to mention that the discussed models of evaluation, according to their nature make up the formative evaluation, i.e. the evaluation that should provide information with feedback action on the process of capacity building, institutions building and systemic solutions.

2. Effects of environmental change (field D)

Here, we talk about the same aspects of capacity and institution building, and systemic solutions, just as in the previous section. The difference being that in the previous section we talked about the evaluation of developmental *process*, and its dynamics of change, and here we deal with the evaluation model called *summative*. Namely, we discuss the evaluation of stable effects of this long-term process.

The central issue of the summative evaluation should be the evaluation of the accomplished effects on three levels:

a) At the level of the individual schools participating in the project, especially the schools-regional centers (model school) with the aim of establishing whether these schools have become institutions - stable centers for the development of the project in a certain region (the roles of school-regional centers have been discussed in detail in the Introduction of the II part of this *Manual*). The type of evaluation, adequate for this task could be the case study, which would include different quantitative and qualitative indicators of schools' activities. In the case study analysis, documentation about project implementation (mandatory for each school) would be used. In order to realize a plan of such evaluation, a typical evaluation project should be devised.

b) Network of schools N30+*

From the very start this network has been structured as the basic instrument for implementation of the Active Learning Project.
Thus, the evaluation of the real and accomplished effects of that network is especially important for the evaluation of capacities and institutions for generating sustainable effects of the project.
This evaluation is based on the information from the database on N30+, and should contain two large groups of indicators. On one hand, there are indicators of database richness (containing information about the project web-site, *Manual*, various materials and their distribution, collections of scenarios and video-tapes, the schools and teachers participating in the project, etc.). On the other hand, there are indicators about the functioning of the N30+ network: the extent and the amount of exchange within the network via e-mail, the exchange of products, live contacts, the content of these exchanges and their usefulness.

c) Systemic measures as a support to the project

Here we deal with the systemic measures brought by educational institutions and educational authorities. The goal of this evaluation is to create a summing-up (for specific periods) of real and stable systemic measures such as accreditation of the project, decisions on determination of the schools to enter the N30+ and their rights and responsibilities, creation of possibility for different organization of the scheduled work in schools (apart from the lesson-class organization), decisions on active learning facilitator's working hours, adopting legal measures (including legal regulations) which would regulate the system of in-service teacher training , system of professional development and up-grading of teachers, legal regulations

* At the beginning, we talked about 20+ network, but in the meantime the number of schools in the network has increased to 30+.

for introducing the changes in the functions of educational inspection and school principles, etc.
All these systemic measures would be a powerful support to the innovative behavior of educational institutions and their employees. This would create a significant institutional and systemic framework for the accomplishment of lasting Active Learning Project effects.

Taken together the process of capacity and institution building, and systemic solutions, and the accomplished effects of that process, create conditions for sustaining the ALT project changes, because they will serve as a basis for generating effects in the end users of the project.

Thus this aspect of evaluation - the ecological one is of vital importance for the success of the project.

3. Process of change in individuals and small groups (field A)

The process of change in individual project participants starts simultaneously with the environmental process (changes in institutions). These two processes are intertwined and influence one another. That is why the evaluation of both processes is necessary.

However, when we talk about the models of evaluation, especially about the instruments used for the evaluation, the difference is substantial. Since we deal with the individuals (in the process of change, as well as the accomplished effects), the methods and instruments for evaluating individuals are used, and as a result this kind of evaluation is called psychometric evaluation, or psychometric assessment.

The process of change in the course of project participation of teachers, whom the project is mostly intended for, is evaluated at first through assessment of their attitudes and attitude changes toward the ideas and practice of active learning. Questionnaires and attitude scales are used for assessment of these attitudes and the dynamics of their change. These instruments are applied in different phases of project participation and in different circumstances: after the basic seminar, after supervision seminars, following the first individual attempts of applying the active learning ideas in practice, following a scenario analysis and performed active lessons. Attitude assessment immediately after the seminars (regularly practiced) provide more information about the first impressions and attitudes toward the very active learning ideas, the way they've become familiar with them, while the assessment after certain attempts of practical implementation of those ideas, include teacher's opinion whether these ideas are applicable in actual conditions at all.

The second source of information for evaluation of the process of teacher changes are the data on how often the ideas learned in seminars have been implemented in teachers' everyday work (how many scenarios have they produced, how many performed lessons, and their qualities). These data can be obtained in every school for every teacher.

Extremely important form of evaluation of the quality of practical application of active learning ideas are the analyses of produced scenarios and analyses of active lessons, and participation of teachers (individually or in small teams in the analyses). This type evaluation is continuously practiced, and all project participants are trained for its application.

For the research on the changes in professional knowledge, techniques, and competencies for the implementation of active learning, specially designed achievement tests can be employed (some of them have already been used), but still the key role have the practical achievements such as written scenarios, performed and recorded lessons and their analysis.

It is important to mention that all of the above mentioned forms of evaluation of changes in teachers as individuals, or in small teams of teachers, have the character of *formative* evaluation. Their main purpose is to receive feedback information which can be used for accelerating the change and improving professional competencies of teachers, important for the implementation of active learning in schools.

Very similar procedures and with similar goals are used for evaluation of the change in attitudes and behavior among other project participants. These participants include: pro-

fessional and expert associates, school supervisors/inspectors, school principals. Of course, the content of their professional competencies is different, which is taken into consideration in instrument development.

In the communities where the parents have been introduced to the ideas of active learning /teaching, it is important to determine their attitudes by using specially constructed questionnaires.

Since the concept of active learning/teaching wants to be a child-friendly school, it is important to conduct a survey on attitudes and perceptions of the active school among the students themselves. The instruments to be used in this assessment are: questionnaires, open-end questionnaires, interviews, and group discussions with students in different phases of their exposure to active teaching/learning, as well as observation of lessons and the analysis of the recorded lessons can also be a valuable source of student attitudes (general lesson atmosphere, degree of activity, work concentration). All these instruments should be used for evaluating student's subjective experience (motivation for participating in this kind of instruction, liking-disliking), but also their perception (are they able to verbalize differences between active and traditional instruction, can they observe changes in their status, and their roles in instruction), also the content of their judgments (are they able to state what is learned better or worse in active learning/teaching in comparison with the traditional instruction, etc.). Obviously, this evaluation of the dynamics of change in students toward active school has a character of *formative evaluation*.

4. Effects of individuals (filed B)

Accomplishing stable effects in individuals (first of all in teachers and students), is certainly an end goal of the innovations introduced by the Active Learning Project. Up till now, we have tried to demonstrate that without the creation of lasting implementation structures in the environment (capacity and institution building, and systemic solutions), developed through a long-term process with numerous oscillations and resistance, it is not possible to achieve sustainability of the effects in individuals.

4.1. Effects achieved in teachers and other project participants

The lasting effects in teachers in implementation of the active teaching/learning methods are part of a general process of professional development and promotion of teachers. Of course, here is dealt with the acquisition of new professional knowledge (most of all about the nature of pedagogic interaction and the methods of interactive/active teaching/learning), but also about the new skills and work techniques, new models of marking student progress, but also the new educational philosophy, new attitudes and different professional identity and subjective experience of that identity.

The evaluation of stable changes in all these variables can be achieved by appropriate achievement tests, questionnaires, and attitude scales. A place in this evaluation is reserved for educational inspection (especially if transformed in direction of advisors)

All the same, the most valid assessment of the real changes in professional behavior in teachers, or changes in school practice, will be through the work products of each teacher, such as innovative scenarios for active lessons (including the publishing of those scenarios in collections of analyzed scenarios), performed active lessons (observed or recorded on the video-tape), and the analyses of the products, as well as participation of each teacher in the analyses of scenarios and recorded lessons of other teachers. Based on such practical products for each teacher, a personal portfolio should be created that will be included into the database in the school-regional center.

For other participants in the project (professional associates, professional associates-facilitators, teachers-facilitators, inspectors/supervisors, school principals) the procedure for evaluation of the accomplished effects is very similar and it won't be discussed in detail.

At the end, it is important to mention that such evaluation of the effects still retains a characteristic of formative evaluation, but here some aspects of the evaluation appear in a form of summative evaluation. Their results are used for teacher promotion (and for up-grading of other project participants), within the project framework, but also for general professional up-grading.

4.2. Student effects

The end users of this entire project named "Active Learning" should certainly be the students. But not only some limited set of student population (in some kind of experimental schools), but as many students as possible for a longer period of time. In order to achieve that, it was necessary and it would continue to be so, to build machinery discussed throughout the *Manual*.

Still, a critical test of the successfulness of the enterprise called "Active Learning", is the accomplishment of educational effects in general. Of course, for establishing these effects in students, the way of evaluation must be in accordance with the nature of instructional process argued in the ALT project. For clarification purposes, it should be mentioned that it would be unnatural for the educational process to change in the spirit of interactive and active learning, while keeping the existing student assessment system that rewards reproductive knowledge. Clearly, one can not develop learning with understanding, independent problem solving, and learning by discovery and preserve the student assessment system centered on reproductive knowledge.

The system of assessment of student achievement should be in accordance with the nature of the process of teaching/learning within ALT, and should include the following types of educational achievements (to be assessed by adequate methods and instruments):

- **Motivation for learning:** (the goal of the project is to increase the motivation, which can be assessed through indicators such as: absence from the active lessons, degree of concentration during the lessons in the form of continuous work longer than the allocated lesson time, evaluation of the subjective experience of active learning by using questionnaires, etc.)

- **Acquired knowledge:** lasting knowledge, useful outside of the immediate context in which it was acquired. The adequate instruments for the evaluation of that knowledge would be standardized achievement tests in which a test of understanding dominates, but also a test of integrated concepts and of systems of conceptual knowledge, transfer problems, assessment of higher intellectual skills and procedural knowledge are common. Lately, in many programs for student testing, such criterion-referenced tests or "basic literacy tests" are used for different school subjects, but also for assessment of (cross/curricular knowledge and skills). In assessment of this type of knowledge, the *technique of personal portfolio*, i.e. personal record can be used. These portfolios testify about acquired student competencies by cumulative product collection of student participation in the process of active learning/teaching.

- **Skills and competencies**
  - *Intellectual skills:* skills of problem solving, knowledge of methods, techniques and procedures, methods for independent intellectual work and information processing, skills for using informational technology, etc. It is difficult to test these skills with a paper-pencil test, but they can easily be recognized in the course of active learning methods and through outcomes of activity for which those skills were necessary (production of texts and reports, report on small individual or team research, creation of posters, preparation of public presentation of one's work, etc.). Therefore, the adequate methods for evaluation are: observation in the course of learning activity, situational tests and a portfolio, teacher evaluations
  - *Social skills* such as communicational competence, team work ability, ability for group decision making, techniques for conflict resolution, life skills. Here the adequate methods and instruments are: observation in the course of group activities, participation in public presentations, situational tests, and a portfolio (specially team products), teacher evaluations.

- **Attitudes and values**

  Here we deal with the attitudes and values closely connected with the school work itself, but that are not a direct consequence of major ideologies and religious systems. The attitudes and values in question are toward individual and cultural differences, tolerance to different opinions and attitudes, high appraisal of personal intellectual autonomy, respect of the rights of others,

development of self-respect, etc.
Instruments adequate for assessment of attitudes and values are: standardized and unstandardized attitude scales, observation in the course of learning and group activities, teacher evaluation (especially if teachers are trained for such assessment).

- **Creative production:** here, most of all we deal with the assessment of creative abilities and creative products originating as a result of the specific learning experiences in school and not as a result of specific individual exceptional talents.
Methods for evaluation these aspects of educational achievements are observation in the course of activity, analysis of activity's products, and teacher evaluations.

# # #

Generally, from two-dimensional model of evaluation of a complex and multi-level Active Learning Project, many complementing models of evaluation have been developed. Out of all these models of evaluation, so far only the indispensable ones for the continuation of the project have been employed. They have been an essential source of information for the further development of the project. This fact explains why have the *evaluation of the change process in the environment and individuals, and less evaluations of the effects* that had been used most frequently. Thus, the evaluations were mostly formative, because they have provided feedback information about the course of project implementation. In other words, the dominant forms of evaluation till now were meeting the *needs of project participants* and less of the other partners and interest groups.

Dependent on the needs of other partners, various forms of evaluation have been planned and will be systemically employed (summative evaluations of the effects in the environment and summative evaluation of the effects in individuals, especially the students). One form of summative evaluation of the effects in students deserves a special attention in the future.

Namely, in schools (in class and subject teaching), where students participated in active learning/teaching for longer periods of time (e.g. one school year), it is necessary to perform a systemic evaluation of the effects in students. The procedure for performing such systemic evaluation is known. That is the experiment with the parallel groups of students learning the same academic material. The groups must be matched from the start in the terms of abilities, socio-cultural background, and previous knowledge of a certain subject. The only significant difference is participation in different kinds of instruction. One group is participating in traditional instruction, while the other in active learning/teaching. After longer exposure to the different kinds of instruction, an assessment of educational achievement is carried out, and a standard analysis of similarities and differences is performed. For such a major endeavor, it is necessary to provide needed conditions, financing, and to make a special outline of the study. This kind of evaluation would truly be a crucial test.

PART III

THEORETICAL AFTERWORD

THE NATURE OF STUDENT ACTIVITIES IN ACTIVE LEARNING / TEACHING

This last chapter of the *Manual* is meant to explain the theoretical foundations of the Active Learning/Teaching Project and the concrete solutions contained in the Manual.

The overall concept of the Active Learning/Teaching Project and concrete solutions for school learning problems are presented on the preceding pages (teacher's role, child's position, types of learning, etc.). From the beginning, they were based on a specific theoretical viewpoint. In the beginning, it was global and insufficiently specified, but as the work on the *Manual* advanced and practice trial implementations were made, the theoretical viewpoint had been gradually molded into a precise form. Here, we need to point out that the theoretical framework of the Active Learning/Teaching Project is to a large degree an original piece of work of the project authors, and not something taken over from others. To be more precise, it is principally an original synthesis of some modern views on school learning which have expressed the Zeitgeist of the last decade.

There is no need for a detailed presentation of the theoretical framework of the Active Learning/Teaching Project in a manual of this kind. The concept has been partially presented in theoretical works (Ivic, 1994; Ivic,1996), and more comprehensive and thorough reports are under way and will be published in scientific journals. We shall, therefore, present the concept in a concise form.

Instead of giving in detail the theoretical postulates (which are always more or less convincing and argumented statements of the author(s)), it is far more important to see how successfully the *Manual* has resolved some of the key problems in the practical implementation of these ideas, their operationalization, how coherent and mutually coordinated the given solutions are, the extent to which they can inspire teachers and practitioners, and the extent to which they are viable in school.

When launching a project under the name "Active Learning/Teaching" (the authors feel that the name "Interactive Teaching - Active Learning" would have been more appropriate, which is clear from the *Manual* on the whole), one cannot but think of the movement for the educational reform which emerged in the late XIX century and the early XX under the names "active school", "new school", or "progressive school". These associations are not wrong. It would, however, be wrong to think that what we call here "Active Learning/Teaching" is a belated and obsolete echo of the former endeavors to radically restructure school, endeavors which have in fact been going on for a century. We must point out to the readers who are inclined off hand to classify the idea of our project as the old active school that this is not the case and that they must make an effort to grasp the essential differences. No great effort will be required, since the differences are significant and easily detectable in all operational parts of the Manual and will be very clearly set forth here.

A real challenge for anyone who wishes to devote serious attention to contemporary education is a wide range of paradoxes, which have been evident in the past hundred years or so in the very endeavors made to create a new kind of active school, and of new problems in education, which have emerged in the more recent time. We will begin in fact with these paradoxes and problems.

It is a big paradox that the active, progressive school movement (let us take John Dewey as a paradigm of that movement) failed on the whole, although it had seemed to promise a great deal. Why did it happen?

Our view is that the biggest paradox of the old active school is that it achieved the best results (most often in the form of individual schools which gained reputation) in practice with the younger age groups - pre-school education, or the lower grades of elementary school, or with children with disabilities. Isn't it unusual that the active school, which insists on the highest possible degree of autonomy for the children and their independent activities in learning and development, has proved to be most successful with the younger children, whose abilities are limited, and has hardly been applied in the case of older children and adolescents, whose abilities are more highly developed and who more strongly aspire for greater autonomy and have more mature and autonomous personality? Wouldn't it be logical to expect that if the application of program of children's independent activities in the learning process is initiated when the children are young, the autonomy and independence of the children

will steadily develop as their education advances until they gain the status of mature and competent educated persons?

Another set of paradoxes has to do with the traditional school. Why is it that this type of school, which is completely centered on the school subjects and not the children and predominantly based on lecturing, i.e., the transmissive type of teaching, has been so persistent (although not in its original form)? Why has such school, which could be seriously criticized, nevertheless been producing some educational results?

In addition to these intriguing problems, which have been evident for quite some time, there is a whole range of new phenomena in education which raise the same essential questions as the paradoxes we have been talking about. These phenomena have not been properly evaluated, either theoretically or in practice. We shall deal only with some of these phenomena.

Attempts are being made in many countries at resolving the problems of learning at school by replacing the learning of school subjects with the "learning to think" (see a review of such efforts in the Hamers & Overtoom publication, 1997). The idea on which these attempts are based is that the content of thinking is not important, but that the faculty of thinking can directly be exercised by means of various clever strategies of resolving different problems. Is that the right way to solve the accumulated problems, especially the problem of an immense increase in the amount of information in all domains ("knowledge explosion")? At the same time, various competitors of the school have clearly become more significant, especially the learning through electronic and video media. Does this call into question the very institution of school and the forms of learning we have known so far as learning at school?

It is through important international agencies dealing with education (UNESCO, UNICEF, etc.) that the ideas of the child/student/learner-centered school and the child-to-child learning in its new form of mutual learning/communities of learners are being developed, especially in adult education in developing countries and the education of marginalized social groups in developed countries. Theoretical evaluations of these new undertakings, as compared with the centuries-old experiences in the development of school, should take into account the changes in the educational objectives and the new teaching aids (information technology, etc.), which are at our disposal today.

Every attempt at providing serious answers to these paradoxes and new challenges in education unavoidably brings into the fore issues of the nature of children's activities and roles in the learning process (which inevitably raises the question of the activities and roles of the adult, i.e., the teacher). Questions about what does it actually mean that a child is active in the learning process raise even more fundamental questions about the nature and meaning of learning at school and school experience, as a form of human experience. This type of experience should be compared with other types of human experience, such as experience in personal life, professional experience, etc. An anthropological look at these problems raises even more essential questions about the nature of the school culture, i.e., makes us look at school as a cultural niche and a subculture in many ways different from the other environments.

The theoretical framework of the Active Learning/Teaching Project is an original product, based on numerous inspirations, incentives and theoretical foundations. We will list the most important ones.

a) First we refer to a set of theoretical constructs and practical enterprises to transform school, which we call the "old active school," such as the ideas and practice of Kerchensteiner, Lay, Decroly, Dewey, Montessori, Ferriere, Freinet, etc. We are not interested in the conceptual differences between or the factual history of the teachings of these important authors, but in what constitutes the spirit of the time that they all reflect despite all the differences between them. The elements of these pioneer undertakings, which have been built into good contemporary schools, are especially instructive for us, as are also the reasons for the relative historical failure of these very stimulating pedagogic ideas, i.e., the theoretical reasons for which these movements for the innovation of school failed on the whole? We hold the view that the basic problem with these pedagogic concepts was actually their understanding of the nature and type of children's activities at school.
b) The theories of Piaget and Vygotsky, as the most important contemporary theories of the mental development of children, cannot be bypassed in any effort made

to identify children's activities that are conducive to the children's development. Both theories have had a strong impact on the conceptions of school and learning at school and both continue to be an important inspiration for many educational reforms. The major conceptual differences between the theories of Piaget and Vygotsky are also significant for the resolution of problems with which we are concerned here. Both of these theories were, each in its own way, part of our theoretical outlooks while we were working to resolve problems of the conception of Active Learning/Teaching.

c) Then there is the view in the sociology and anthropology of school and education, which treats learning at school as an inseparable part of the overall social and cultural context. This viewpoint supplements well the limited pedagogic and psychological concepts, since it views school as a social institution which is inter-dependent with other social institutions and looks on learning at school as an activity which is not only individual but is also institutionalized and, therefore, also regulated by social needs, social rules and cultural patterns.

The three listed sources of our theoretical framework and practical solutions (experiences of the "old active school," theories of Piaget and Vygotsky, and socio-cultural views of school and learning at school) are complex theoretical constructions. An effort to integrate them would be an endeavor that would by far exceed our possibilities. It is an extenuating circumstance that we have used these sources very selectively and that we have used only what was to help us define the key category for us -- children's activity in the process of learning at school.

What we have conditionally named here the "old active school" emerged over a period of more than half a century and encompasses different pedagogic thinkers, several national and international movements for radical school reforms, a series of practical steps (experimental schools, application of new pedagogic methods, new forms of work organization at school, innovations in the designing of school facilities, production of new didactic materials, etc.). Despite the diversity, it is possible to find common denominators, especially from the angle, which interests us.

One of the common denominators is the different treatment of the child. The traditional pedagogy was centered on the contents of the school subjects to such an extent that it was rightly named "pedagogy without children" (although etymologically viewed, the word "pedagogy" literally means the guiding of a child). Quite contrary to that, the "new" "active" school from the beginning of the century takes into consideration the interests of the children (Decroly's famous *centres d'interets*), children's life experience (Dewey), and begins to create curricula originating from the children, at least for the younger age groups. In other words, some of the child-centered school conceptions we have today have their historical roots in these and similar pedagogic movements.

Another common denominator of the "new", "active", "progressive" school, as it has all been called, emerged as a reaction to the total domination of verbal forms of learning, which the traditional secular school inherited from church schools. Challenging the domination of the verbal, the new school in greatly adhered to the Latin maxim not verbis sed rebus (not by words but by things), i.e., to the view that it is not the most important to manipulate with words but with things. This meant that practical activities, the handling of real objects became at least as important for the child as the word (in the chapter *Methods of Active Learning/Teaching* such concepts were described through practical vs. verbal learning).

These general ideas about the child, the importance of its interests, life experience and practice (all forms of practical activities) gave rise to a whole spectrum of ideas for the innovation of school. We have Kerchensteiner's working school, Lay's pedagogy of doing, Decroly's interest centers, around which an entire pedagogic intervention is organized, Dewey's learning by doing and learning by experience. The school environment was diversified thanks to these ideas -- in addition to classrooms/auditoriums, schools got gyms, labs, workshops, studios, farms and student cooperatives -- and handiwork, drawing, designing, gardening, lab classes, sports activities, etc. were gradually legalized as forms of school work. Respect for the child was reflected in the gradual introduction of forms of work in which the child's individuality was respected, at least in principle, (for instance, the writing of compositions on topics of a free choice, freedom of artistic expression), and elective and

optional school activities were gradually introduced, as were also many forms of free extra-curricular activities (sections, etc.)

Despite all these major changes in the culture of the school environment, one could not say that the centre of life at school -- the teaching of the mandatory school subjects -- had essentially changed in the direction of the active school. There were strong enough reasons for this. The key reason was in the concept of children's activities in the process of learning at school. This being only a summary of more extensive analyses, we will list only the basic characteristics of the concept of activity as understood by practically all the authors of the "old active school." According to them, activity is:

- practical outdoor activity (some authors, including Lay, literally mean physical work);
- based on personal and external motivation of the child;
- individual activity of the child;
- spontaneous life, personal activity, different for every child or group of children (e.g., country and town children) and dependent on the living environment of the child;
- charged with emotions and has strong personal idiosyncratic meanings, i.e., meanings specific for each individual child;
- in direct interaction with concrete objects in the environment, i.e., in direct contact with the physical and social reality.

Whereas the traditional school was primarily concerned with transmitting a verbally mediated general knowledge, the new, active school adopted as its supreme principle of work at school the stimulation of activities which possess the above listed characteristics. The duty of the school was to start from the children's personal life experience, to stimulate children's practical activities in direct contact with the reality (work in a workshop, on a school farm, in botanical gardens), to diversify those activities, to expand them from those linked to the immediate environment towards those which go beyond the home and the local environment. This ensured children's meaningful activities at school, a stronger link between school and life, etc. Let us quote Dewey's statement after his experience with the progressive school movement:

"To imposition from above is opposed expression and cultivation of individuality; to external discipline is opposed free activity; to learning from texts and teachers, learning through experience; to acquisition of isolated skills and techniques by drill, is opposed acquisition of them as means of attaining ends which make direct vital appeal; to preparation for a more or less remote future is opposed making the most of the opportunities of present life; to static aims and materials is opposed acquaintance with a changing world." (Dewey, 1963, p.19-20).

One could say that this is a representative statement and that it has all the strength and weaknesses of the active child concept in the "old active school." The attraction and strength of such a pedagogic standpoint are clear in themselves, so that we will consider only the weak points of this concept, as they are the reason for the failure, on the whole, of Dewey's and similar endeavors.

In the book *Experience and Education* (Dewey, 1963), from which the above quotation was taken, Dewey gave a critical analysis of his own and similar pedagogic endeavors and significantly revised his standpoint. Thus, internal contradictions led him to partially change his view and realize that the main problem of learning by personal life experience is *inadequate organization and systematization of the knowledge acquired in this way* and the insufficient recognition of the knowledge and experience which are not a product of personal life experience. Let us have Dewey say this himself:

"That up to the present time the weakest point in progressive schools is in the matter of selection and organization of intellectual subject-matter..."

"It is a ground for legitimate criticism, however, when the ongoing movement of progressive education fails to recognize that the problem of selection and organization of subject-matter for study and learning is fundamental." (Dewey, 1963, p. 78)

Although continuing to adhere to his principle of learning by personal experience, Dewey raised serious questions in his book, a serious self-analysis:

a) How can a child arrive through personal experience at the mature and organized knowledge which exists in all school disciplines (Dewey, 1963, p.74);
b) How can the accumulated experience, which is a feature of every culture and

which helps one understand the immediate present, be made part of personal experience (Dewey, 1963, p.78);

c) How can a grown up and mature person play the role of a guide in learning without endangering the principle of learning through the child's personal experience (Dewey, 1963, p.26).

The resolution of these serious problems in a serious way would lead to the abandoning of this kind of concept of children's activity, which is the cornerstone of Dewey's progressive school. For instance, it is very instructive to see how Dewey thinks the problem under c) can in principle be resolved (the problem of the adult and the child in the learning process): "A solution to this problem calls for a well thought out philosophy of the social factors which have an impact on personal experience." Thus it seems that the child's individual personal experience is the foundation of the progressive school and that this individual experience is not quite individual, since it is determined by social factors and cannot remain within the framework of immediate experience, but can progress toward a structured knowledge found in school disciplines! This fully self-critical book, written near the end of the author's career, points to the internal instability of the theory of learning at school based on learning by doing and learning through personal life experience, i.e., founded on a practical activity of the child and its personal life experience. This is the key element for answering the question about why it was not possible for this conception to be successful overall (the individual contributions of the "active school" principles are not disputed).

A further understanding of the nature of children's activities in the learning process will be helped by an analysis of the active school of Jean Piaget and his own theory of children's activities. Piaget is a staunch champion of the active school ideas and methods, and his theory of mental development is the most beautiful ode to the child as an active being and active factor of its own development. Still, Piaget, who was well acquainted both with the active school theories and their practical implementation, clearly became aware of some basic weaknesses of the theories of learning based on personal experience.

Analyzing the theories of the "working school," and the pedagogy of the former "active" school, Piaget says: "It is clear, on the one hand, that manual labor has nothing active in itself if not prompted by the student's spontaneous exploration but performed strictly in keeping with the teacher's instructions, and, on the other hand, that, even in the case of the younger children, activity, in the sense of an effort based on an interest, can be both a thinking and solely developmental activity or a practical, manual activity." (Piaget, 1969, p.216-217) Or: "The first (misconception)...is that every 'activity' of a subject or a child is reduced to concrete actions which goes only for the most elementary stages of development but under no circumstances for the higher stages in which the student can be fully 'active' in the sense of personally rediscovering the truths that he/she is to acquire and in which the activity takes the form of internal abstract thinking." (Piaget, 1969, p.106-107) Piaget says that another misconception is that the activity related to concrete objects is reduced to perceptional processes which produce good copies of the reality, instead of it being realized that action on concrete objects is in fact the transformation of the reality in the form of practical activities and mental operations which lead to the insight of hidden relationships. (Piaget, 1969, p.107).

It is, therefore, absolutely clear to Piaget, in whose theory of mental development the key place belongs to a shift in early childhood from practical actions to internal mental ones (intellectual operations), that to keep the child at the level of practical activities and direct action on objects and the physical reality cannot be a basis for the child's learning and development. There is a very nice and easily remembered formulation of this idea: Development leads not to manipulation (lat. manus - hand. i.e. handling of objects) but to "mentipulation" (lat. mens, mentis -- mind, i.e. the "handling" of the mind, i.e. the mental processing of information in the reality).

This expresses the basic theoretical weakness of the "old active school," which, parrying the verbalism of the traditional school, saw a solution in a school based on external practical activity and personal life experience.

Piaget's own version of children's activities in learning introduces essentially new elements. The following statement is of immense importance for the understanding of the contribution made by Piaget to the active school theory: "In other words, the basic principle of active methods should be inspired by the history of the sciences and can be

expressed in the following way: to understand something means to independently discover it or reconstruct it through rediscovery, and we should adhere to this principle if we want to mold in the future persons capable of producing and creating and not only of repeating what already exists." (Piaget, 1975, p.24-25; bold letters in the original).

The following three extremely important elements for building comprehensive and precise conception of children's activities in the learning process stem from this theoretical standpoint;

- it specifies an important component of the concept of activity as an internal (mental) activity: this activity (or at least one of its forms important for learning at school) means going through the intellectual processes through which science has gone when making the discoveries and inventions! This means that the student reconstructs these thinking processes in reduced form;
- the object of mental activities is not only personal immediate experience but also the intellectual contents of each scientific discipline;
- the basic objectives of learning at school through active methods are: a good understanding of what science has to offer, but, at the same time, acquiring of intellectual skills for creative and productive activities.

We are now quite a way from the school based on practical activities and personal experience. This is so above all because scientific knowledge is being introduced into children's activities and the child who is learning acquires intellectual procedures at which science has arrived. Piaget is truly a champion of the child's active role in learning and maturing. He, just as the representatives of the "old active school," sees the child's activity (for him mostly internal mental activity) as "a spontaneous individual (personal) activity." Talking about prerequisites of a successful reform of learning, especially of the natural sciences, he says: "The first of these conditions is, of course, the application of active methods, whose essential component is spontaneous exploration by the child and the adolescent and which requires that all truths which are to be adopted must be rediscovered by the student or that these discoveries be reconstructed by the child instead of being simply transmitted to it (in ready-made form)." (Piaget, 1975, p.20). In this conception of active methods, the teacher's role is to arouse interest (to stimulate); to create situations in which the children encounter problems: to tell children things that contradict their own opinion (to give counter-examples). To put it briefly, the child is an individual agent, practitioner for the "old active school," and a spontaneous individual thinker for Piaget.

As it is quite obvious, according to the conception of the "old active school," children's knowledge and understanding are developed through practical activities in the immediate reality, through which the child gains personal experience, while the role of the adults (and the teachers) and school, as an institution, is to cultivate and expand that experience. There is a belief, just as in the case of Dewey that this path can lead towards a progressive organization of knowledge, encountered in sciences. It remains completely unclear how is the switch to be made from personal experience to structured scientific knowledge.

Piaget's concept goes a step further. In addition to personal experience, the child must encounter problems which science has encountered through history. Piaget's entire study of intellectual development has practically consisted of giving children different problems in different sciences and studying the children's behavior in such situations. This means that the child is given problems and not scientific knowledge in a ready-made form and left to rediscover through spontaneous personal explorative behavior what science has already arrived at.

The role of school, as an institution, and of the teacher is to stimulate, to create problem situations for the children, proceeding from specific problems in individual sciences, and occasionally to oppose the child by confronting it with what contradicts its own opinion. This means that science serves here more as a source of individual challenging problems and not as a system of organized knowledge; we also have the adult, above all the teacher, who stimulates the child with his/her own additional challenges but lets the child discover everything by itself, i.e. rediscover what has already been discovered in individual sciences (Piaget's famous *comprendre, c'est inventer/reinventer*, to understand means to discover or rediscover).

A great many programs for learning to think (directly planned exercises in thinking) are based on such and similar assumptions (see, for instance, one of the latest collections of

such programs in the book *Teaching Thinking in Europe*, 1997, which includes our Active Learning/Teaching Project).

Should and could the children learn in this manner at school and acquire the curriculums?

Such questions of fundamental importance for the understanding of the nature of learning at school are raised also by viewpoints which may at first glance be surprising and as if questioning the children's activity as an important factor of learning.

We shall present here that standpoint about the nature of the activity of student through the ideas of Russian psychologist P. Shchedrovitsky. In a very challenging work, *Active Forms of Learning and the Problem of the Substance of Education* (1993), Shchedrovitsky raises problems with active methods of learning in a very dramatic way. Thus, in comparison with the "old active school," which viewed the everyday practical experience of children as the main form of learning and which tried to introduce that form of learning into school, as an institution, Shchedrovitsky makes one seriously think when he says: "The one who practically acts does not learn, and the one who is free of action learns." (Shchedrovitsky, 1993, p. 52). One realizes that a very serious problem has been raised (it is necessary to know, for the sake of a correct understanding, that Shchedrovitsky implies under the word "activity" actual practical actions which are laden with pragmatic objectives and circumstances in which they are carried out).

The author goes further in challenging the active school. Turning to the sources of student activities in the learning process, he discusses various postulates. Are the sources in the human being, itself, in the human environment, in the teacher, in the interaction of the teacher and the student, or in the content of what is being learned? Shchedrovitsky here, too, gives answers which appear to be surprising at first. He for instance says: "From our point of view, activity is not and cannot be in the human being and his/her 'mind', although it is possible to find there subjective correlates (activities)." (Ibid. 1993, p. 66) He goes on to say: "In other words, we shall repeat once again the main conclusion of our work: A source of activity cannot be found in man, himself." (Ibid. 1993, p. 71). In order to be absolutely clear, Shchedrovitsky makes the following practical point: "For as long as the problem of 'activation' and elaboration of active methods of learning is reduced to the problem of 'interest' and 'enthusiasm' on the part of the student, we shall suffer defeats and failures in the organization of the pedagogic process and work at school." (Ibid. 1993, p. 72)

These views of Shchedrovitsky's (and not his alone, but of an entire model of thinking about school and education) are important in themselves since they raise many questions and represent a dam against the active school being easily and thoughtlessly embraced without understanding what it actually means.

Shchedrovitsky's views get full meaning only once we get to know his positive solutions to problems of the activation of students (it need be known that Shchedrovitsky is an advocate of that activation). For the problem that we are concerned with here, which is as clear and precise as possible identification of the nature of the student activity in the learning process, Shchedrovitsky's analyses provide two more important components. This is how he formulates them: "Objectiveness is an inseparable feature of activity," and "We must say, at the same time, that it is not so much a question of a spontaneous as of an organized activity." (Ibid. 1993, p. 65). What Shchedrovitsky is talking about here is of key importance for the understanding of the nature of learning at school. When developed, these ideas roughly mean the following. The activities that we involve the children in during the process of learning at school are not activities in a vacuum, which stem from an individual's sheer interest. These activities are always and unavoidably activities with an object of cognition, they are produced in an encounter and confrontation between a subject of cognition and an object of cognition. In the school vocabulary this means that the activities in the learning process are activities, which are in real interaction with the structured intellectual contents of each school subject. This is why these activities acquire in the process of learning at school the character of specific activities, such as artistic, mathematical, literary, biological, physical, etc. This is the objectiveness of activities that Shchedrovitsky is talking about. It is something very, very different from the "working school," the "pedagogy of action," the "learning by doing," above all in the sense that the object of activity is a convergence of the structured contents and models of activities, of models of thinking and beliefs which are built into each school discipline (see for more details Ivic, 1994, 1996).

Next we have another important determinant of activities, and i.e. that activities are organized and structured. In other words, learning at school is a highly institutionalized activity which takes place in specialized institutions -- schools -- which themselves constitute a separate ecological niche shaped by the culture, in which life and work occur in a particular way. The latest book of Jerome Bruner (1996), in which Bruner talks about the "school culture," specifically deals with the firm roots school and learning at school have in a culture.

We need, therefore, to add two essential components to our analysis of the concept of student activity in the learning process (in addition to what the "old active school" and Piaget's theory have given):

- objectiveness of the activity: student activities are inseparably intermingled with the nature of the content of that activity;
- student activities are highly institutionalized activities, deeply rooted in the culture and the learner in such context is actively engaged in structured systems of knowledge and values.

We will now put into different perspective everything that we have said here so far about the nature of activities in the learning process. Namely, all that we have said so far means that it is necessary to distinguish between two types of human experience and two types of knowledge.

The distinction is basically made on the basis of epistemological criteria, i.e. on the basis of the criteria of the theories of knowledge which are concerned with defining the nature of knowledge, the relationship between knowledge and reality, the origin of knowledge, the differentiating between different types of knowledge, the structure of knowledge, the way knowledge is acquired, etc. We shall start with these complex questions in the simplest possible way, with an example. A female teacher at an Active Learning/Teaching seminar has said that her students who live in the country better know how to explain in school what a savanna is than a pasture or a meadow. The teacher was rightly surprised that children who know what a pasture is through their own experience, senses and practical activities (for they daily work on one) better know how to define what a savanna is, although they have never been in one. Here we come upon the indispensable distinction that must be made between two types of human experiences, two types of human knowledge, and even two types of culture.

One type of experience (we shall designate it E-1) is designated by a whole range of terms that are either synonyms or have similar meanings: experienced knowledge, practical knowledge, personal life experience, "school of life," lay-man knowledge, folk knowledge, etc. (in French there is the term *savoir faire*, knowing how to do). This type of experience is a sum of practical learning and skills, of sensory-perceptive knowledge, customs, popular beliefs and taboos. This type of experience is gained through the "method of one's own skin" and is laden with emotions.

A country child, who gains the knowledge of a pasture and a meadow through personal experience, possesses this first type of knowledge. The comment made by the child's teacher points to something i.e. characteristic of this type of knowledge: difficulties in its use in the school environment.

The other type of experience and knowledge (we will designate it E-2) is also known under different terms, including school knowledge, academic knowledge, erudition, expertise (higher forms of this type) or simply as knowledge or a system of knowledge. This type of knowledge and experience is for the most part not gained through direct interaction with objects and the reality. Knowledge of this type is mediated by means of symbols (verbal or other kinds), is acquired in an "artificial" way, through other persons or through cultural media. The basic way to this type of knowledge is through relationships of different sets of knowledge and concepts, or to put it more precisely, new particular knowledge, values, etc. are understood and acquired as part of comprehensive, by culture shaped systems of knowledge and values (esthetic, moral, religious, etc.), systems of procedures, methods, skills, and activities.

This way a country child in our example gets to know what a savanna is, although he/she has had no direct personal experience with it. In a well organized process of learning at school, the concept "savanna" will gain a meaning for a child if linked to other similar concepts (steppe, pampas, prairie), to opposite concepts (desert), or to more general

concepts (lowland, flatland), etc. It is particularly important for the process of understanding a new knowledge gained in this way to link the concept "savanna," which is strange to the child, to the child's experienced knowledge of a pasture and a meadow (and that knowledge is not conceptual!). The made connection must work both ways, i.e., what the child knows about the pasture from local environment should be used as a basis for understanding the term "savanna" and vice versa. The more abstract concept "savanna," which is not laden with personal meanings, should help the child to see his own pasture in the relationship with other similar concepts and make the necessary generalization.

It is neither possible nor necessary further to develop this complex, basically epistemological difference between the two types of knowledge and experience. We shall only add here that these differences appear also at a deeper level: what is involved is two cultures, two types of culture, each of which has its distinctive features and values. Roughly speaking, the first type of experience (E-1) is close to the village culture, and the other (E-2) to the urban culture. E-1 is close to what is described as common sense, and E-2 to what we call erudition, education. The difference between the two types of knowledge is not quantitative. Instead, we have two to a great degree different models of thinking: one, close to common sense, often pragmatically very successful but limited by the frameworks of concrete practical situations, and another, which is based on complex symbolic transformations and complex systems of knowledge, and which at times appears to have unnecessarily distanced itself from the reality, but it seems that this condition for creative and productive transformation of the reality and development of the complex intellectual constructions.

Talking about the "school culture," Bruner says something that should be given considerable thought: "The major subject in school, viewed from a cultural angle, is the school, itself." (Bruner, 1996). Therefore, school, as a specific cultural environment, is what constitutes its own essence and not the contents of the individual academic subject matters, and school, as an institution, is the birthplace of the E-2 type of experience. Any effort to erase the difference between school and the child's everyday life experience (by having school only to extend the E-1 type of experience) entails the danger of precisely negating everything new and original that school introduces into the child's development. (These in no way calls into question the need for a continuous and lively exchange between school and the local environment.) This is Shchedrovitsky's earlier analyzed idea about the organized and institutionalized environment of student activity put differently.

Vygotsky has given the most productive analyses of the relationship of the two types of experience in his theory, as a whole, and, in particular, in his book *Thought and Language* (Vygotsky, 1977). The chapter *"A Study of the Development of Scientific Concepts in Children"* is especially concerned with the problems we have discussed and we wholeheartedly recommend it to our readers.

Vygotsky shows the difference between the two types of knowledge and experience through opposition of everyday (empirical, experienced) and scientific concepts one against another. These two types of concepts differ in their origins, structures, basic characteristics, and in the way they are acquired. We will not give here detailed analyses, but will draw some conclusions we need in dealing with our problem -- what is the nature of student activity in the learning process.

The basic message is that the difference between these two types of knowledge and experience (E-1 and E-2), their originality and opposition must be sustained. This means that it would be a critical mistake for the theory and practice of pedagogy if the learning of scientific concepts was to be reduced solely to the cultivation of the child's personal experience (i.e. the "life concepts", as Vygotsky calls them); if we were to think that mental development takes place only through personal experience; or if learning at school (i.e. acquisition of the scientific concepts) was to be reduced solely to the process of gaining new information and this mostly with the help of memory. This is how Vygotsky puts it:

"The theoretical and practical untenability of this standpoint surfaces the moment it comes into contact with scientific criticism. We know from the study of concept formation process that a concept is not a pure sum of associative relationships which are adopted by memorizing and that it is not an automatic intellectual habit but a complex and genuine act of thinking, which cannot be learned simply by the exercise but inevitably requires that the child's very thought be elevated in its internal development to a higher level so that the concept can emerge in mind." (Vygotsky, 1977, p. 186, bold letters in the original).

As part of the whole of Vygotsky's theory (for more details see Ivic, 1994), such a standpoint on learning at school means the following. In school, and only in school, the child comes into contact with structured systems of knowledge (systems of scientific concepts, etc.). Definite models of thinking are built into these systems of scientific knowledge (vs. everyday life experience). At school, through the learning of individual school disciplines, the child establishes interaction with those cultural products. However, these systems of knowledge cannot be simply adopted by memorizing but they require genuine intellectual activities. By developing these activities, the child not only gains knowledge but also develops new models of thinking. And here we come to the key idea of Vygotsky's theory of learning at school: the intellectual development of the child takes place through learning activities, the major line of mental development at a school age is the development through learning at school. In other words, the major lever of influence on the mental development, created by culture, is in fact organized learning at school.

Not every learning at school will generate development. For instance, in an attempt of direct verbal transmission of concepts (we have called it transmissive teaching) nothing is accomplished "…except a meaningless adoption of words, sheer verbalism, which simulates the presence of certain concepts in the child, while it in fact only conceals a vacuum. In such instances, the child adopts words and not concepts, it uses more memory than thinking and is incapable of applying the acquired knowledge with understanding." (Vygotsky, 1977, p.187)

Such a way of learning can be avoided only if some indispensable conditions are ensured. The first is to establish a complex interaction between everyday concepts (type E-1 experience) and systems of scientific concepts (type E-2 experience). It is in itself clear that the adoption of scientific concepts must rely on earlier personal experience and it is a good way to activate children. However, Vygotsky introduces another possibility of establishing the interaction of scientific and everyday concepts. E.g., when we ask a child to tell us what the word "grandson" means and the child replies: "It is a living being from the grandfather," the child is quite obviously making an intellectual effort to apply independently a type of definition of the scientific concepts it has learned at school to define something that it has adopted through personal experience.

Another important condition for learning at school not to be reduced to memorizing but to turn into a real process of intellectual development is systematic cooperation between the adult/teacher and the child. "Through this cooperation between the child and adult, which constitutes the essence of educational process, the system of knowledge is transmitted to the child, but this cooperation explains the development of the scientific concepts which represent the zone of proximal development for the empirical (life) concepts also..." (Vygotsky, 1977, p. 185). With such postulates, and not only in this paper, Vygotsky became the founder of the theory and practice of cooperative learning, which spurred the further development of the concept of activity, especially through the introduction of interactive, shared activities (see the chapter *Methods of Teaching/Learning*).

Judging by the earlier published analyses of Vygotsky's theory (Ivic, 1989, 1994, 1996) and what has been said here, Vygotsky's theory contributed to the further development and enrichment of the concept of student activity:

- student activity has a powerful source in a dynamic two-way interaction between E-1 and E-2, while the maintaining of a difference between the two types of experience and their skillful pedagogic confrontation is one of the most powerful instruments for student activation and school is a place of an intensive integration of the two types of knowledge;
- the fact that scientific knowledge is organized in integrated systems opens endless possibilities for intellectual student activity in establishing a relationship between concepts;
- the objectiveness of activity that Shchedrovitsky talks about is highly specified in the case of Vygotsky: Every school subject, as a system of knowledge, contains a highly specific model of thinking (thinking is activated in one way in Math, and in different ways in Biology, History, etc.). This means that every field of organized human knowledge carries in itself a potential to stimulate specific activities in children, and such activities are possible without encountering such school knowledge;
- complex and productive forms of cooperative activities are developed around the

contents in different school disciplines in institutional learning at school (confrontation of views, cooperation and providing of psychological support for the child, shared activities and participative learning, co-construction of meanings, intellectual "apprenticeship," etc.).

In this theoretical background, we have given a condensed summary of a historical-theoretical analysis of the concept of student activity in the learning process. We have seen how the concept has changed and developed over the time. A logical continuation of these analyses would be an attempt to producing a synthesis of the different meanings of that concept, which have been given here. However, we will not do that here. Firstly, because we want to avoid providing any ready-made formulas and definitive solutions, just as on the preceding pages, and also to maintain a spirit of openness. In this way we wish to stimulate the activities of those who will use this Manual. We expect that the provocative ideas about the nature of student activity will also inspire readers to further explore the matter.

Another reason is that, instead of precisely theoretically defining the concept of student activity in active learning/teaching, it was more challenging for us to take what is theoretically valuable in this concept and make it part of practical solutions to problems at school (see in earlier chapters about the teacher's roles, methods of teaching/learning, the defining of the child's status at school and in learning, models of children's participation, elaboration of concrete forms of active learning/teaching, etc.). If we have not done this well, we will not make up for it with any elegant theoretical formulations about the meaning of the activation of children.

In place of such a theoretical conclusion at the very end of this chapter, we shall go back to the paradoxes and open problems with which the chapter opened and try to give brief answers in the light of the analyses we have carried out here.

- The progressive, new, active school, as a concept of learning at school, has on the whole failed, which has been inevitable, since it tried to achieve the E-2 type of experience and knowledge through the cultivation and broadening of the E-1 type of experience, which is in principle impossible. But partial contributions on the part of this conception are undeniable and they have been built into the contemporary school.
- The basic paradox of the "old active school" is that it has accomplished a greater autonomy of activities with younger, less mature and less competent children (in preschool education, class teaching), who are less autonomous as personalities, while it has had no practical success in achieving the autonomy of activity with older, more mature children (for instance, in subject teaching). The explanation for this paradox, too, is that this conception failed to find either a theoretical or practical transition from E-1 to E-2.
- The E-1 type of experience and knowledge (personal life experience) is invaluable in the process of learning at school but only as a starting point. It is a pillar of the activation of children. This form can be developed also as reciprocal learning of the "child to child" type, but it is not possible, even in principle, to achieve progress in learning and the mental development of children without establishing a dynamic relationship with the E-2 type of knowledge (systems of knowledge and values shaped by culture).
- One of the most powerful mechanisms of stimulating the activity of children in the process of learning at school is a skilful pedagogic encounter of E-1 and E-2. This accomplishes both the linking and confronting of the two types of experience, which again serves as a basis for developing forms of receptive meaningful learning of the A2, B2 types, etc. in our typology given in the chapter *Methods of Teaching/Learning*.
- The E-2 type of experience and knowledge carries in itself an immense potential for the activation of children. This type of activities are not of an external, motor, manual and practical nature. Activities, which are stimulated and developed through E-2, are internal, thinking, reflective activities. They are activities, which are specific for the major fields of human knowledge and values structured as complex systems. This type of activities -- prompted not by personal but by supra-individual experiences -- include Piaget's activities of the re-discovery and reconstruction of a scientific knowledge, and Vygotsky's type of activity of establishing a connection between individual concepts (concepts at the same level of general-

ity, or those logically superordinated or subordinated) and performing all intellectual operations made possible by every cultural system of knowledge expressed through symbolic systems. The diversity of these activities, which are prompted by every specific field of organized knowledge (mathematical, artistic, literary, experimental, etc.), is endless. The A2, B2, B3, C1, C2 and D1 types of activities, as given in our typology, rest on this foundation.

- The adoption of systems of knowledge and values takes place in an institutionalized environment, and school as an institution, is itself a vehicle of the E-2 type of experience and culture. A key place in this institutional environment belongs to interaction between the adult/teacher and the child who is learning. The interaction is organized around the school academic subjects. The role of the teacher is not only to arouse interest and motivate but it is also one of an active partner. However, since it is not a question of transmission of ready-made knowledge to the child but of active intellectual mastery of systems of knowledge, the child is a highly active partner. In this way learning at school becomes a real pedagogic interaction, i.e. teaching/learning. This interaction generates productive forms of activity: exchange of knowledge and experiences, shared activities, co-construction of new knowledge and meanings, participatory studying, cooperative learning, etc. This is the foundation of our E category forms of learning. Unless conditions are created for such genuine interaction, learning at school is deformed into various forms of transmissive teaching with no effect at all, into the *laissez-faire* pedagogy, pragmatic learning through pragmatic activities (as is the case of various types of handiwork, polytechnic instruction, etc.).
- The traditional school of the type limited to lecturing and transmission has led in many contemporary schools to a disastrous kind of pathology of learning at school in the form of a rote learning without understanding -- cramming up -- in the form of sheer verbalism and pseudo learning. The roots of this pathology are deeply embedded in the conception of the traditional school and are extremely difficult to eradicate so that they stubbornly persist. Whenever school fails actively to include the child in the process of learning, it ends up in the pathology of meaningless learning, cramming up.
- The paradox that the traditional transmission school stubbornly survives and does produce some results in learning and the development of children can be explained as being due to the fact that it does introduce some kind of E-2 into the life of children, i.e. some organized parts of systems of knowledge, skills and values. The organization of knowledge at school in the form of school subjects is a translation into practice of the general idea that the best experiences are organized in some kind of cultural systems. In this way even a poor school introduces more system in the human knowledge than personal experience or the modern media education, which offers episodic and fragmented knowledge (this, of course, does not include planned educational media programs).
- The ultimate reach of the transmission type of traditional school is the form of learning under A2 in our typology, i.e. meaningful receptive verbal learning. It is an invaluable mechanism for transmitting the historical heritage and cultural traditions to the new generations. This form of learning is in all likelihood the pillar of school, as an institution as we know it. It is, and it most likely still should be, the most frequent form of learning. But it should be clear that we are talking here about meaningful receptive verbal learning as a form of active learning/teaching in which the adults and the child together achieve co-construction of meanings and construct or re-construct systems of knowledge, values and activities which already exist in the given culture. This form of learning is in that sense a form of very active learning/teaching and its best variants are gradually turning into non-receptive forms, such as is the case with the problems solving (type C1), and learning by discovery (type C2 in our typology).

However, not even the best forms of receptive learning can achieve some fundamental objectives which are becoming increasingly important in modern education, such as the shaping of creative and productive individuals, individuals who take initiative. These goals can be achieved only through the forms of activity which go beyond the receptive, such as autonomous problem solving (type C1), a free experimentation and learning by discovery (C2), divergent activities (D1), cooperative forms of work (E2), in which there is always a possibility for co-construction, i.e. the joint building of something new.

INTERACTIVE EDUCATION - ACTIVE LEARNING: A VIEW FROM THE "ABOVE"

Active Learning/Teaching is a well-known term for a project whose real nature can be best designated as " Interactive Teaching - Active Learning". This is also inferred in the syntagm used within this project's framework: active learning/teaching. This syntagm indicates the indivisibility and complementarities of the two processes, learning and teaching, respectively, their close inter-dependence and causality: what happens in one segment of the whole directly modifies the functioning of the other segment.

The Active Learning/Teaching project evolved as a response to grave and accumulated problems in our educational system. All efficiency indicators of our educational system pointed to alarming results. We can conclude that the education in our schools is reduced to repetition of dictated lessons, at best with understanding. This enables the school to transfer some clusters of knowledge and skills (but not the system) from some school subjects, while at the same time, the whole series of very important knowledge and skills needed for living and working in contemporary turbulent times is left concealed.

Active Learning/Teaching is a project of large-scale action research, whose long-term aim was to change the methods of teaching and learning in Yugoslav schools, which in turn would enable children to be better equipped with the relevant knowledge and skills for the future professional and personal life, led in significantly altered socio-economical conditions. This attempt to change alarmingly bad conditions in our educational system is based on existing self-initiatives, original attempts of certain schools and teachers who despite general demotivating context still show exceptional results in their pedagogic practice. Thorough examination of all elements making up a good educational system (school buildings, equipment, curricula, textbooks, educational policy, financing, teaching staff, evaluation, etc.), lead us to a conclusion that the strongest aspect of our educational system are the teachers. We have a very good qualifying structure of teaching staff that could be trained for implementation of active learning/teaching methods through an existing advanced teacher training system.

Even though originally initiated by unsatisfactory effects of our educational system, Active Learning/Teaching Project is at the same time envisioned as to represent an open system for acquiring various current educational innovations. It treats the educational process as a dynamical interactive stream, constantly developing through pedagogic tensions, which are not incidental, but carefully planned and provoked in educational situations. Active Learning/Teaching can be treated as a theory of teaching / learning, but also as a broad educational movement connected to all relevant elements of an educational system, while representing an original theoretical and practical entity.

The expression "the student should be active", is a guidance of teaching process, not for centuries, but millenniums and could be compared to the expression "the child should be healthy". Everybody agrees with this statement, and it is treated as a common sense. It is normal and highly desirable state of affairs. There is no one to argue to the contrary, but the problem arises from two things: what is the precise meaning of the term "active", what is "activity" and how to accomplish it? If it is difficult for active students to "grow" on school ground after centuries of institutional education, then something is wrong either with the "ground" or the "plant" that we want to cultivate under given conditions. In order to fully appreciate the term "activity" as defined in the Active Learning/Teaching Project, we will present the theoretical basis of this project.

Theoretical Foundation

Activating students in a teaching process and precise definition of the term "activity in school learning" are not new problems, but nevertheless still quite relevant. The school is a socio-cultural institution, cultural ecological niche, with which the child forms various dynamical relationships. Within this school framework, an organized, structured activity of school learning takes place. However, there is a collision between the nature of that context on one side, and the kind of student activity on the other side. The school, conceived as an institution for transferring fundamental cultural models and knowledge, strives for standardization and formatization of the educational process. Natural, spontaneous child activities, initiated by his interests and own investigative actions, escape the pre-set molds, portions, and defined steps. Therefore, we have a collision of partner characteristics in communication, the school environment and the child: the collision between defined, standardized, prescribed activities demanded and offered by the school environment, and the spontaneous, independent, self-motivated and initiated activities of the child. This is a collision of academic, school and social knowledge of numerous generations and living, personal experiential knowledge of the child. Reconciliation in this collision is much more difficult to achieve than it appears.

There are numerous trials of resolving this problem. Generally speaking, on one side we have models of school focused on curricula and universally important contents that the school should offer to the children (curriculum-centered school), and on the other side, we have models of school oriented to the child, his abilities, interests, and spontaneous, experiential knowledge (child-centered school). The utmost negative consequences of the first approach are: school verbalism, modified curriculum to the capabilities and interests of children, passive position of children who become mere recipients without being able to voice their opinions. The negative consequences of the second approach are: unsystematic and unequal education of children from different communities, as well as serious problem of transfer of universally accepted civilization knowledge and accomplishments in different areas which are not individual, but social experiences.

Opposing the "hard" school verbalism, one of the problems left unresolved by the active, progressive school from the beginning of the 20th century, is precisely the transfer of the academic knowledge to the children. The educational ideal of this pedagogic approach was "doing", learning by doing, through practical activities of children and manipulation of real objects. According to this approach, the aim of school is to start from personal child experiences (…"the teaching must start from the experiences that children already possess"…" everything that children should learn must be derived from the materials which at start fall within the area of their life experiences" (Dewey, 1963)), to stimulate children to engage in practical activities, directly founded in reality, which will afterwards, through school work become broader, refined, and more complex. However, as children get older, the problems faced by this progressive educational approach get bigger (Dewey, 1963). Obviously, the problem of acquiring systematic academic and school knowledge (culture patterns), which was thrown out of the window in the "learning by doing approach, suddenly commenced and is still left unresolved. Its resolution would be necessarily limited by insisting on externally perceived, manipulative activities of the children from the repertoire of their life experiences.

Active Learning/Teaching represents an original synthesis of several contemporary views on school learning, which marked the spirit of the last decades. At the very mention of the project's name, a few will think of the movement of educational reforms in the late 19th century and the start of the 20th century, known as the active, progressive, new school. Of course, Active Learning/Teaching is not an attempt to revive these ideas, but a totally original approach, based on critical reexamination of the old active school ideas, yet crucially different from it. The fundamental difference between the two approaches is a definition of the key term "student activity" in the process of school learning.

According to the Active Learning/Teaching, the key notion of student activity has been developed in the light of the Piagetian concept of active knowledge construction, and Vygotskian concept of mutual activities, i.e. a co-construction of knowledge between a child and an adult in the framework of asymmetric school interaction[26]. Entirety of theoretical analyses has brought us to the new definition of student activity in the learning process. The essence of this revised concept of student activity, is made up of several components: a) the basis of this activity is mental activity; b) these activities are diverse (from active receptive thought out

26 see Hedegaard, 1990; Ivic, 1992; Ignjatovic-Savic, 1990; Vygotsky, 1977, 1978, 1996; Vuyk, 1981, a, b; Wertsch & Stone, 1995; Pesikan, 1999.

learning, to problem solving and creative learning); c) learning activities are specific for certain content, field of knowledge.

Activity is an extremely complex and difficult concept for definition. Despite the fact that in our language *passive* is an antonym of *active*, in cognitive psychology, adjective *passive* is inappropriate. The term active, is not the measure of our literal physical engagement in the process of learning, but the nature of mental processes triggered by this learning. The activity is a continuum of diverse activities of different complexity levels. There are numerous criteria, dimensions that can be used to differentiate activities: verbal-manipulative, pre set-independently chosen, receptive-interactive, thought out- mechanical, convergent-divergent, repetitive activities - discovery activities, ordered-initiated, independently performed - performed with assistance, individual - group, etc.

Within the Active Learning/Teaching Project, the activity has been primarily defined as a mental, cognitive activity, in close correspondence with the content of a certain domain. Different aspects of activity mean that the system of knowledge from different scientific domains is characterized by distinct thought models. In other words, student activities are inseparably connected to the content nature of the activities themselves, and every domain of human knowledge stimulates distinctive student activities. This is the key point. Depending on the nature and the type of knowledge (mathematical, historical, literary, etc.), the student, in the process of learning encounters various intellectual problems (mathematical, literary, etc.) and by attempting to solve them, develops specific patterns of activity. Therefore, the development of knowledge and cognitive development have been unfolding simultaneously in the process of acquiring organized corpus of human knowledge from various areas in the institutionalized school context. Every area of human knowledge has been organized around dynamical interaction of living, experiential student knowledge and academic, scientific knowledge offered by the school. The school should be the place of intensive integration of the two types of knowledge (spontaneous and scientific concepts, Vygotsky, 1996), whose confrontation represents fruitful potential for activating students.

The Active Learning/Teaching Project has two specific aims. The first aim is to improve the amount and quality of knowledge and skills that children receive in schools. Precisely because of this aim, it is exceptionally important to develop specific activities for a particular school subject. Through this course of action, the elementary knowledge for the subject will be better acquired, as well as unique way of thinking will be developed. The second aim for the Active Learning/Teaching Project is changing the position of students in schools. Perhaps, the position of child in the school can be best illustrated by the Active Learning/Teaching poster "Basic School Formula" (see appendix 1). In this poster, by applying mathematical operation of subtraction in a witty way, we can see how very important segments of the child's personality have been neglected: socio-emotional aspect, extracurricular knowledge and skills, freedom of choice, freedom of speech, individuality, initiative, privacy. The child has been reduced to the cognitive aspect, in the narrow and simplified sense. The aim of Active Learning/Teaching Project is not only acquiring curriculum, but also the development of personality and individuality of each child through broadening of repertoire of teaching methods in realization of curriculum, ensuring learning motivation, enabling and stimulating independence in learning, encouraging rich repertoire of child activities (leading an argumentative dialogue, public presentation of own ideas, cooperation with others on the same problem, making choice, creating a new solution, etc.) which are deficient in everyday school practice, and the engagement of social and emotional aspect of child's personality.

For the moment let us return to the name of our project: active learning, and once again reinforce the aforesaid. Occasionally, this name provokes opinions that the passive learning is nonexistent, that every type of learning is inherently active, therefore, the title of the book represents a pleonasm. Every kind of learning is active (activity is a continuum, and not a discrete unit of yes/no type), but there is difference between levels of activity and mental processes engaged in various types of learning. It can be agreed on that rote learning, even in the case of a reasonable material, is extremely difficult, demanding a lot of repetition and considerable effort on the part of students. However, regardless of the amount of time and effort, behind the rote learning there is only a process of memorization, one of the simplest cognitive functions. That learning process will be more complex if while memorizing we use mnemonics. Consequently, besides memorizing, we would be establishing new associative connections within the memory system. Contrary to this process, in problem solving (school or every day) many higher cognitive processes are used: cre-

ativity, independence, initiative, application and association of knowledge, as well as student personality and his ability of cooperation with others.

Hence, different types of learning engage different types of cognitive processes of various complexities. The learning that requires more complex and higher cognitive processes, creativity, association of knowledge, application of knowledge, independence, initiative, freedom of choice and speech, can rightfully be called *active method*. Conversely, we have learning which requires simpler and lower cognitive processes, reproduction, model imitation, application of already learned patterns and stereotypes. The school is open for all methods of learning, from memorization of senseless material (different kinds of determined symbols), to problem solving and cooperative learning, depending on our aim that we want to realize on the given material. Each scientific discipline has a certain methodological arsenal more suitable then the other, and the school should precisely through specific contents of chosen culture model, develop those particular models of thought.

Practical realization of the active learning/teaching project

Based on the developed theoretical foundation of Active Learning/Teaching Project, important long-lasting action research for elementary school have occurred. The need for such considerable action researches was imposed by the state of Yugoslav schools. The Yugoslav elementary school has extensive curricula with general education in its focus. Curricula, while extensive and very detailed, are the better part of our educational system. However, regarding the methods of teaching, it is characteristic of Yugoslav schools to be very traditional. In this kind of school, lecturing and similar kinds of frontal forms of work dominate, where students are mostly in the passive position of knowledge recipients.

The attempt to change this situation is founded on several strategies to be implemented successively and/or in parallel.

The first strategy includes different types of Active Learning/Teaching seminars *(Various Types of Training for Implementation of ALT Ideas (types of seminars))*. It is important to emphasize that the seminars themselves are a practical model of active learning, because they are not based on lecturing, but the idea of active and cooperative learning i.e. they are realized with maximum engagement of seminar participants (by activating their previous knowledge and experiences).

The second strategy's goal is a creation of network of thirty schools[27], which will represent regional centers for the development and implementation of the ALT ideas. In these schools - experimental centers, the research team and a panel of teachers (who have completed training seminars) will plan, develop, and practically implement in classroom setting active methods in the realization of the curriculum. Another objective of these schools - centers will be to popularize ALT ideas among other schools in the region.

[27] The number of schools in a network can be increased, depending on the interests of particular schools. The main objective is to clear the way for mutual professional communication and exchange between the schools, not only of ALT ideas, but also all other professionally relevant aims.

At this stage, the types of student activation for specific school academic subjects will be operationalized. The key role will be played by teachers, specialist for specific subjects. They will, in collaboration with pedagogues and psychologists, plan, implement, and analyze new types of classes. There are hundreds of scenarios for classes from various subjects, with dozens practically realized and filmed where possible.

The third strategy is a production of the second revised edition of the "Manual" for application of active methods. The methodology used for manual construction is the same as before - working versions of numerous materials have been compiled by the research team, and after implementation in seminars, the materials have been changed and finalized according to the participants' valuable suggestions (see preface to the second revised edition of this *Manual*). Currently, several additional modules (specific parts) are being prepared, in which a specialist for particular school subjects develops practical realizations of active learning ideas for their respective fields.

Additional strategies include production of the video-manual and realization of the TV series. The video manual is a type of educational film, which will portray successful, practical realizations of active learning ideas. The film will show not only the successful realization of the whole lesson, but also positive solutions for the segments of teaching situation (i.e., integration of group work activities, introduction of the problem for a certain topic, surpassed problem of specialization in group work, etc.). Most of the preparatory activities for the realization of the video manual have been completed, and in the coming year it is expected that the filmed footage will come out. There are a substantial number of the

filmed ALT lessons on video tapes, and most of them are being exchanged between the schools. It is redundant to mention that neither scenarios for ALT lessons, nor filmed material are some ready made formulas for imitating, but sources of ideas, possible ways and approaches in realization of educational aims for a given subject. Everybody using these materials, as well as the ALT manual is invited to originally and creatively adapt them according to the conditions and practical needs. That kind of usage is in accordance with the spirit and name of our project, where active relationship of the user toward the offered texts and materials is expected.

Negotiations around the production of a TV series in which the ideas of active learning will be developed and promoted haven't been finalized yet. This TV series would show accomplishments within the ALT school network, practical realization of the ALT ideas in various contexts, concise and popularly presented theoretical foundations of the ALT project. The TV series should use all media specific means to be actively involved as a partner in important field researches.

Present achievements:

a) Development of the original active learning concept;
b) Design and implementation of numerous diverse ALT seminars for training of teachers, associates, principals, and supervisors, that were spread around regions of Serbia and Montenegro following the cascade principle (see *"Various Types of Training for Implementation of the ALT Ideas - seminar types"*);
c) Completion of the second revised edition of the Manual for Implementation of the Active Learning/Teaching Methods;
d) Initial group of ALT trainers has been enlarged in the meantime (seminar for new trainers took place on lake Palic in 2001), and currently a new group of trainers is undergoing training;
e) A network of thirty schools - regional centers has been formed in Serbia and Montenegro. Many school have very much started practical application of knowledge and skills acquired in seminars (see: *The Work Plan of School in the 30+ Network*);
f) The basic scenario for the TV educational series has been produced;
g) Several educational workshops for particular school subject have been practically worked out, and they will be published as accompanying publications to the *Manual*
h) Hundreds of lessons from various subjects and different Yugoslav schools have been video-typed using VCR;
i) In cooperation with the Ministry of Education, the problems of systematic support to the ALT project, as integral part of educational reforms in regions where the project is implemented, are being worked out;
j) A comprehensive promotion of the ALT project has been carried out for professionals as well as general public (report could be found in published and electronic media, especially in local media in regions where seminars have taken place, lecturing in schools, teacher meetings, journals, numerous international congresses, etc.);
k) A web-presentation in Serbian and English has been made, where central information about the project and people involved can be found. This modern kind of communication will be of great help not only to teachers involved in the project (schools from the 30+ network are all equipped with computers which enables them to communicate via e-mail), but also to all interested in advances in education;
l) An original, specific method of lesson analysis, named sequential analysis[28], has been developed, and all teachers and participants in the project have been trained for implementation. The main advantage of the sequential analysis method is ability to give detailed and objective lesson analysis. Based on the obtained diagnosis, precise situation in lesson that needs more work, improvement or change can be identified. The goal was to enable teachers to evaluate their work, and based on the performed analysis, know how to make necessary changes and adjustments;
m) An organizational scheme of the ALT project has been developed, and the criteria for various forms of project participation for individuals and schools have been determined;
n) ALT project is a part of an inventory of European innovative programs for the development of thinking (Hamers & Overtoom (Eds.)): Teaching Thinking in

[28] At Harvard University in Boston, USA, a review of the educational curricula for teachers and evaluation of their work has been carried out (within the seminar Strengthening Teacher's Education, University of Harvard, Sept. 2001). So far, a similar method to sequential analysis hasn't been developed anywhere else in the world. There are still attempts to analyze interactions between teachers and students, which generate numerous additional problems, but don't solve the primary - evaluation of the lesson quality.

Europe: Inventory of European Programmes, Utrecht University Press, Utrecht, 1997);

- o) At the request of the UNICEF office in Tbilisi, Georgia, the ALT project is being developed in Georgia since 1998. For this work Prof. Ivan Ivic has received a medal "Jacob Gogebashvili" form the Ministry of Education, the highest recognition that can be achieved for the contribution in the field of education in Georgia. Prof. Ivic has become the first foreigner to receive such prominent Georgian national recognition. Besides Georgia other republics of the former USSR are interested for the implementation of this project (Armenia, Azerbaijan).

Evaluation (on the problems and models of evaluation see: *"Model for Evaluation within the Framework of ALT"*). Several levels of the project evaluation have been planned: (a) evaluation of the project and program conception, (b) evaluation of the implementation process, and (c) evaluation of the effects achieved in school and with students.

For the evaluation of the active learning concept, seminar programs and strategies for implementation, the UNICEF has engaged foreign experts. The project and program conception has already undergone several expert opinions. Among other things, the ALT project has become the part of the inventory for the European innovative programs for the development of thinking.

In the schools from the network, the follow-up system for the implementation of the ALT project has been used (how many schools and teachers are applying the new method, and the way it is done). Through a direct cooperation of the project research team and the schools - regional centers, the process of implementation has been systematically followed.

For the evaluation of changes occurring in schools and the effects obtained with students, a separate research project will be developed. This project has an important aim of solving few quite difficult methodological problems of constructing valid evaluation of the effects in ALT schools and students. Some of the problems include: how to check for important long-term aims realized through this kind of teaching, but not during a single lesson or segment of work; how to grade some of the delicate behavioral patterns in students (i.e., good management of student's own learning or group work, the ability to extract key points and to present it in unusual form, or way; the skill of a convincing public performance, conceiving a creative presentation of the work results, etc.).

TEST OF UNDERSTANDING OF THE BASIC ALT PROJECT IDEAS

Throughout the *Manual*, we have tried to present the basic ideas of our concept of active learning/teaching and the ways of implementing those ideas into school practice. We have attempted, wherever possible, to give adequate support and elements for the individual work of manual users for construction and development of the term active learning/education.

If you would like to check how good you've mastered ALT ideas, we offer you a test with problem questions. Answers to these questions can be found in the *Manual*, but not directly, at a certain place.

This test can be used as a material for discussion on basic characteristics of the ALT, or you can use it in any creative way you want. In the case that you become seriously interested in any of the test problems, please don't hesitate to call us at the Institute for Psychology* (that has happened before).

* Institute of Psychology, Faculty of Philosophy, Cika Ljubina 18-20, Belgarde

Test of understanding of the basic ALT ideas

1. What would your answer be to the following remarks:

Active Learning/Teaching is a very expensive methodology of work for our school conditions.

Not all teachers can be trained for the application of the ALT methodology, just more capable and educated ones.

Natural sciences (chemistry, physics, biology) are active by their nature, the only requirement is good conditions for the realization of the lessons.

2. Please state what is the main function of the following basic ALT seminar items, and what do we want to achieve with each of them:

Educational workshop

Analysis of class assignments–

Sequential analysis –

Production of a draft, plan of ALT lesson –

3. **Carefully** read the following statements and choose one that describes best the nature of ALT. Circle **only one** answer.

   1) Intellectual activation is the surest way to active learning
   2) Intellectual activation is impossible to achieve without active involvement in some practical skill
   3) The best lecturing activates the students less than the worst cooperative learning
   4) A rapid change of learning activities, ensures intellectual activation in students
   5) Intellectual activation is the synonym for problem solving

4. State the key aims of the ALT project:

5. From the given words choose and underline one which best describes the nature of ALT:

   1) Intellect
   2) Resourcefulness
   3) Meaningfulness
   4) Cooperativeness
   5) Speed
   6) Pleasantness

6. When in ALT we say *student activity* mainly we think of (choose and circle only one answer):

   1) Intellectual techniques used for teaching students
   2) Diverse attractive activities for children
   3) Activities performed by a teacher, which motivate students to work
   4) Domain-specific activities
   5) Liveliness and happiness of children in the classroom

7. A demonstration of an experiment performed by a teacher in front of the students, followed by an explanation, would be classified as (underline only one method):

   - Meaningful verbal receptive learning
   - Practical meaningful learning
   - Cooperative learning student-teacher
   - Problem solving
   - Learning by discovery

Please justify your answer:

8. How would you explain to a layperson what is a relevant activity for a certain academic subject?

9. In the table below are some of the activities, which could be learned through the course of life. Next to each activity write an ALT method (key method) used for performing each activity:

Activities:	ALT method:
Expressing condolences	
Tying a necktie	
Preparing a lecture	
Writing a letter	
Deciding who has an advantage at the crossroads while driving a car	

10. Among the given answers circle one or two at most, which in your opinion argue the best against the remark addressed to the ALT:

What active learning! Passive learning does not exist, every learning is active.

1) Yes, every kind of learning is active, but the results of different kinds of learning are not
2) Passive learning does not exist, but there are methods of learning which engage simpler or more complex mental processes
3) Active is only the kind of learning which combines the most active methods of work
4) Active is only the kind of learning in which a student discovers something by himself/herself

5) Every kind of learning can fulfill educational and behavioral aims of the school
6) Passive is every mechanical learning
7) Cramming is the right example for a mentally passive, and physically active learning
8) Logical consequence of the previous statement would be that it is irrelevant which methods are used in instruction
9) Passive learning is every learning which occurs without the intention to learn something

11. In the classical pedagogic literature among instructional methods, one can find; work on the text, or the text method. Can you "translate" the text method (work on the text) into some of the methods from the ALT classification? Justify your opinion.

- WE SHOULD MAKE AN EFFORT NOT TO LET OUR SCHOOLS GROW OLD, NOT TO LET THEM GET TIRED PREMATURELY, AND NOT TO LET OUR TEACHERS GROW OLD, SO THAT OUR KIDS CAN COME TO SCHOOL OF THEIR, NOT OUR YOUTH.

Dusan Radovic

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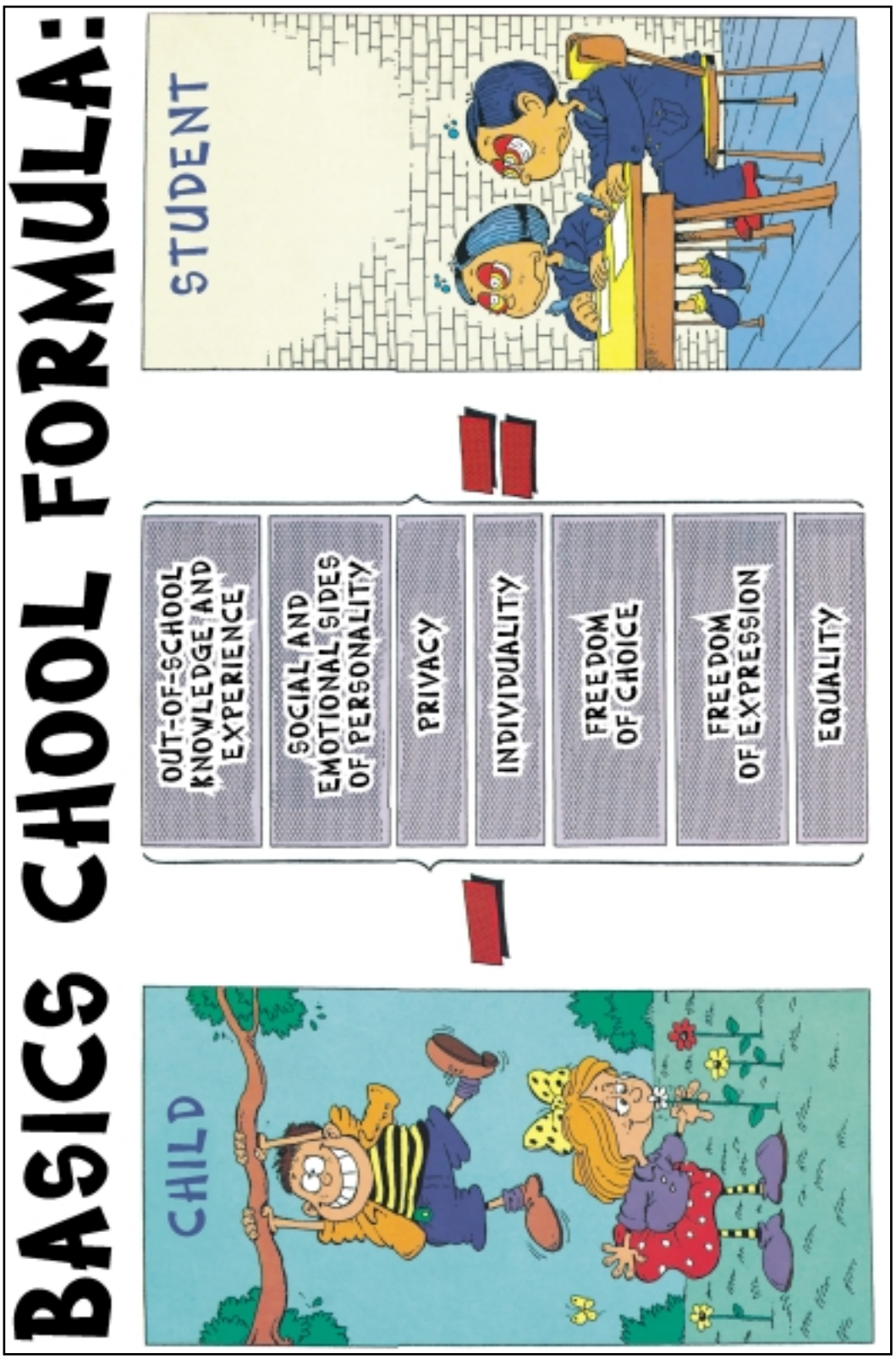
APPENDICES

Appendix 1

POSTER 1: Traditional and active teaching
Idea: Ivan Ivic
Drawing: Dobrosav Bob Zivkovic

POSTER 2: Basic School Formula
Idea: Ivan Ivic
Drawing: Dobrosav Bob Zivkovic



Appendix 2.

ACTIVE LEARNING/TEACHING GLOSSARY

ACTIVITY: Everything that children do in an instructional process (write, listen, read, solve math problems, exercise). In instructional processes, activities emerge as a continuum: from less complex to more complex (therefore, this is not the case of a discrete quality - being present or absent). The activities could be (and should be) very diverse. Many criteria could be selected, and some parameters for classification include: productive - reproductive; meaningful - meaningless; mental - motor; simple - complex; preset - independently initiated; required - chosen; verbal - manipulative, etc. Some are visible from the outside, which makes them easier for teacher manipulation. Apart from this type of activity, more important are thinking activities which are internal, not visible by sight. See: *"Activities and Roles of Children in the ALT Instruction"*.

SCENARIO : ACTIVITY Thinking process, initiated by a task given in instructional situation. The nature of thinking activity is determined by a subject matter, a task that initiated it, and a degree of cognitive development of the student. Due to the fact that this process is not always visible from the outside, the teacher must ensure special assessment mechanisms to see whether the thinking activity is occurring. That is to say, when children draw conclusions about the nature of a chemical substance based on the observed experiment, immediately we can ask how can we claim so with certainty, or what are the mechanisms of verification. See: " *Activities and Roles of Children in ALT Instruction"* and *Theoretical Afterword* in the *Manual*.

FORM OF WORK : In pedagogic literature, forms of work are usually used as a concept connected to the organization of instruction. The forms most frequently mentioned are frontal, individual and group work. However, that doesn't say much what children really do during the lesson, or the way they've been active. The organizational form of work just reveals how "instructional scene" looks like; who is standing, who is sitting, who speaks, but it is still not known if there is instructional process at all, or the nature of that process. In frontal teaching, the main role is played by the teaches, but we are not aware of what the children do. At best, the children are actively listening (see Figure 2: *A Review of the Possible Lecture Breakdown* within text *"Methods of Learning/Teaching"*). When we speak about group work, we learn that children are seated in groups, and that they are doing something. The types of learning that could emerge from this kind of learning (which is for us the most important from the aspect of efficient learning) could include: verbal meaningful receptive learning, problem solving, divergent or convergent learning, and naturally, cooperative learning (see text *"The Most Common Misconceptions of Active Learning/Teaching"*). Therefore, there are number of possibilities. That is why in the definition of methods of learning/teaching, the forms as well as the methods of classical pedagogic literature have been integrated. On the other hand, we think that the efficient management of instructional process requires a more general concept, which will include the entire context of the process, roles of teachers and students, the type of pedagogic interaction, and clearly the nature of student activity (i.e. type of learning). These criteria are somewhat met by the concept of "instructional situation".

INSTRUCTIONAL SITUATION : The Gestalt, the least enclosed entirety of instructional process that contains all important elements. Instructional situation includes the context of instructional process, meaning **physical surroundings -**

"instructional scene" (classroom, lab, school playground, nature, museum…). Afterwards, **scenography**, a borrowed term from the theory of drama, which best describes the concept. Scenography includes all existing material objects, whether they are a part of the surroundings, or have been deliberately added in: blackboard, tables, maps, boards, books, lab apparatus, but also traffic communications, vegetables, rivers, tools…The most important element of instructional situation is **pedagogic content**. The pedagogic content includes the subject matter (more or less connected to the curriculum), educational goal to be realized (implicitly containing the concept of school and education, as well as the educational policy of the state), and the methods of teaching/learning. The biggest part of this Manual is devoted to the relationship of these three parts. The following elements are in codependent relationship with the pedagogic content: **the roles of teachers** (see: *"Inventory of Teacher roles*"), **the type of pedagogic interaction** (see: *"Pedagogic Interaction"*), **position of the student** and the nature of his class activity (see: *"Participation of Children/Students"* and *"Activities and Roles of Children in the ALT Instruction"*). All these elements should be connected in such a way, as to create necessary and sufficient conditions for provoking learning activities in the one that learns. The responsibility for arranging of instructional situation, apart from systematic support or barriers, primarily rests on teachers. He can modify the importance of certain elements within the instructional situation. Sometimes he can assign to himself the most important role (classical lecturing), or children can play the main role (variations of such educational situations are unlimited, see whole section *"Creation of the ALT lessons"*). Sometimes, the surrounding itself can be brought into focus (environmental workshops…). This is an indication of complex codependence of all these elements, which should be kept in mind when aspiring to more efficient instructional process. This is well-expressed in the Scheme 2: Relationship between methods of teaching / learning and other parameters in instructional process.

METHODS OF : THEACHING/ LEARNING

In pedagogic and psychological literature, usually two distinct processes can be found: methods of instruction and learning styles. Labeling these processes "Methods of Teaching/Learning", we wanted to emphasize that it is a unified process, a special type of interaction - pedagogic interaction, which depending on your viewpoint can either be instruction or learning. In instructional process, a teacher ensures conditions or situation for achieving learning. Knowledge can not be transferred directly, they are a consequence of active student construction. That is why a focus is shifted from teacher to student. We've been searching for all methods that will enable students to have active role in instructional process.

All methods are more or less activating, and none can, by itself guarantee active learning/teaching. Every subject matter should be covered using a method that could provide a maximum from a material, while appreciating principles of economy and rationality, and in accordance with the goal set for that material. More about the methods of teaching/learning in texts: *"Methods of Teaching/Learning"*; "Pedagogic Interaction: Interdependence of student Interaction and Teacher Activity".

PEDAGOGIC : INTERACTION

Pedagogic interaction (the basis of instructional process), shares several common attributes with all other kinds of interaction: partners, participants in communication, it is changeable, it is not static, includes the behavior (verbal and non-verbal), follows certain rules, it is susceptible to different types of external influence (it is not happening in vacuum, but in context - physical and social surroundings), two-way influence between partners is understood. The pedagogic

interaction is specific because its fundamental nature is a learning process, more exactly the stimulation of development one of the partners (the child) in general sense. That is why the quality of mutual influence between partners is special. That is asymmetric interaction because the teacher and the student are not equal: the first knows more, his knowledge is incorporated into the system of concepts, he knows the procedures and the way of thinking characteristic for one scientific discipline. On the other hand, the child enters this interaction with the base of previous knowledge and skills, which actively invests, he is the active constructor of his knowledge. The teacher doesn't build a tower of knowledge in child's head by himself, but they do it together, through interaction, so that the process of learning/teaching becomes a process of knowledge construction. If the teacher takes more space, time, and qualitatively diverse activities, he leaves less time, space and possibilities for the child to actively construct his knowledge. Just as the system of connected vessels: who take the bigger part, leaves less for the partner in the pedagogic interaction. Every instructional situation (with appropriate teaching roles, position of the child, methods of learning/teaching) is characterized by different type of interaction (see *"Pedagogic Interaction: Interdependence of Student and Teacher Activities"*).

POSITION OF THE CHILD : In addition to increasing pedagogic efficiency, improvement of the position of children in our schools is the main goals of our project. Improvement of the position of the child primarily refers to the increase of his participation in the instructional process itself. Indirectly, it assumes greater respect for the child's personality, interests, needs, extracurricular knowledge and experiences. However, the core of the need for improvement of child's position in schools and educational process shouldn't be reduced to the psychological concern for the development of child's personality (even it is a worthy aim), but it is a function of greater pedagogic efficiency. Thus, if we accomplish such instructional situation where children's existing school and extracurricular knowledge and interests are starting point, if there is a freedom of expression of one's own opinion (even if it is wrong), if the activity takes place in the pleasant atmosphere, if the demands put before children are sensible to them (not only to the teacher), we have a greater chance of achieving long lasting and more applicable knowledge and understanding. See texts *"Participation of Children/Students", "Characteristics of the Active Learning Project"*.

RELEVANT ACTIVITY : The key and the most important aspect of active learning/teaching. All teachers' efforts during a lesson are directed at achieving relevant activities of children. The activity of children can be relevant, or specific from several standpoints: nature of a subject matter, aim of the class, and aim of every single sequence within the lesson (see *"Sequential Analysis of Active Lessons"*).

The activity of children is relevant, or specific for the nature of the academic subject if it includes the subject matter, the way of thinking, and procedures characteristic for that academic subject. In other words, these are the activities that could be triggered only by the subject matter of a given academic field. The relevant activity of children must contain in miniature everything that generally covers the respective science. For example, biology is the science on which several school subjects rest: when starting school it is *introduction to natural sciences*, and later in schooling, *biology*. Biology as a science has a defined scope of study, or subject matter, characteristic investigative procedures (sample collection, observation, classification, experimentation…), and a characteristic way of thinking (inductive - deductive, but also deductive-inductive, analysis, classification, conclusions based on experiments, etc.). The relative activity of chil-

dren will be easily recognized in the natural science or biology classes if they include the subject matter, procedures, and the way of thinking distinctive for biology as a science, but modified for children's age and their cognitive capabilities.
Further, the relevance, i.e. the specific activity of children depends on the type and the aim of the lesson. Completely different activities of children will be relevant, depending on the lesson type: presentation, systematization or assessment of knowledge. See text *"Activities and Roles of Children in ALT Instruction"* and part of the *Manual "Theoretical Afterword"*.

SCENARIO : ANALYSIS — The first step in the analysis of instructional process. It refers to the analysis of a scenario (still not realized in the class), and is a part of the tools (i.e. sequential analysis) developed within this project for evaluation and subsequent improvement of the ALT classes. Just like SEQA it is applicable to all types of instruction. Scenario analysis allows for prepared lesson to be viewed through student activities, their relevance and relation to planned lesson goals. This enables for modification of the scenario before entering the class. See: *"Activities and Children Roles in the ALT Instruction"* and *"Scenario for Conducting a Situation 'Scenario Analysis for the ALT Lessons'"*.

SCENARIO/ : LESSON PLAN — Scenario is a concept taken from dramatic arts. Just like the quality and quantity of the activity of a screenplay writer are mostly expressed before the filming (while at the filming he has a consultancy role), the same is the relation of the teacher with the ALT lesson. The most of their time is spend in planning and preparation of the lesson, but during the lesson the children are main actors, while the teacher is guiding it from the background. In traditional preparation of the lesson, the instructional process is presented completely from the viewpoint of the teacher (what he speaks, what he does, duration…)[29] . The scenario is such kind of preparation for the lesson that a parallel can be drawn with this Manual: it is a unique process seen from the one viewpoint focuses on the behavior of teachers, and from the other the behavior of students. Therefore, based on the scenario we get a clear picture about the activities of students, the way of their thought activation, the material they are working on, duration of activities, but also types of teacher interventions. See: *Scenario Production for Implementation of the ALT Instruction; Educational Workshop as a Method of active Learning/Teaching and* section *The Analysis of ALT Lessons*.

[29] In the extreme case, children are mentioned in terms of their expected answers to an asked question. Hardly can such degree of predictability be achieved in any kind of human interaction

SEQUENTAL : ANALYSIS — The method for analysis of instructional process in the single lesson. The method has been developed for the needs of the ALT project, but could be applied for the analysis of any type of instruction. In sequential analysis (SEQA), certain whole units of teaching/learning activities have been divided into the smallest relevant subunits, sequences, which can be analyzed individually or as a part of the unit. The sequential analysis is the method which provides objectivity and reliability of the analysis (it allows for the repetition of the analysis and assessment on the part of independent evaluators). It also allows for quantification (the number and the type of learning activity, the number of children participating in such activity, duration of each activity, and correlating the number of children with activity duration). On the other hand, the SEQA is an instrument which enables teachers to perform self-analysis, self-evaluation, auto-evaluation of their own work. See:*"Sequential Analysis of the ALT Lessons"*.

STUDENT : MOTIVATION — The concern about student motivation results from the specific nature of pedagogic interaction whose focus is learning and development of one partner in a dyad (student). The responsibility for its success is entirely in the hands of teachers. Out of this emerges the need for improving the position of a child in an instructional process, and consequently constant search for the modes of student motivation. Actions, techniques and ways of motivating students in the learning process are different: from designing entire instructional process and

instructional situation, modifying certain elements in instructional situation (environment, subject matter, methods of work…), to establishing of qualitative pedagogic interaction. See: *Stock Exchange of Ideas for Implementation of ALT Instruction; Educational Workshop as a Form of Active Learning; Pedagogic Interaction; Interdependence of Student and Teacher Activities*.

TEACHER'S : PROFESSIONAL DEVELOPMENT

The new concept of preparation and teacher's profession is in many ways different from the previous teacher education and the definition of his professional role. See *"Professional Development of Teachers and Active Learning"*.

TEACHER : ROLES

Every profession, including the teaching, comprises different roles which ask for different kinds of activities, and different types of interaction with partners at work (in this case, students). There is a very important (even often neglected) relationship between the roles of teachers and efficient learning of students. This Manual as well as seminars deliver one message: if we want more efficient education, then a redistribution of teacher roles should occur. Much more important place should be reserved for the roles of organizers, motivators, partners in pedagogic interaction, on the expense of still dominant role of the lecturer. More details about the teacher roles can be found in: *"Inventory of Teacher Roles", "Professional education of Teachers and the ALT", "Pedagogic Interaction: interdependence of student activity and teacher activity"*.

Appendix 3.

SCENARIO FOR FACILITATING BASIC ALT SEMINARS

In this part of the text, a detailed plan, scenario is given, according to which a three-day program seminar (see appendix 5) or short seminar in a school - regional center is structured. The scenario has been devised for practicing the basic ALT ideas, and it follows the points from the program of the three-day co-operative seminar. For the purposes of a condensed seminar in a school - regional center from the N30+ network, a section from this scenario which covers the program of the condensed seminar is to be used.

Introduction: What part of the educational process are we dealing with?

Facilitator of the seminar uses *Scheme 1: The structure of educational activity* from the *Manual*, where there is a specially marked square *methods of teaching/learning*, and points to:

a) the things not dealt with on this seminar;
b) the only thing we deal with: advanced training of teachers for the use of active methods of teaching / learning.

Reasons for that choice are discussed shortly: limitation of financial abilities (investments, equipment etc.) and it is showed that the main, now available, resource (potential) is the existing teaching staff that is qualified for its job and has great practical experience. The seminar considers this potential as a stable starting basis and tries to activate it. This is why the seminar is called co-operative, because it tries to, together with the facilitators, activate and organize the competence that the teachers already have.

The seminar is focused on active methods of teaching / learning, and that by:

- content, because the whole *Manual* contains knowledge about active methods;
- performance, because the whole program is performed by maximal thinking and competent engagement of the participants in the seminar.

In this way the participants of the seminar have, a chance to personally experience one model of Active Learning/Teaching.

After explaining Scheme 1, in short are described the actions undertaken in order to increase the possibility of the fulfillment of the idea of the project (look at the bottom part of the scheme from the Appendix). The facilitator has to explain what is the point of each activity and to show the role, which the participants of the seminar will have in some of them.

1. Traditional or active school: pro et contra

a) Objective

This is an introductory part of the seminar. The main goal of it is to prompt the participants to think about fundamental problems of school system. They should try to state for themselves as well as for the others their tacit understanding of the school, to practically try out, in a discussion with others, how many problems arise when one is supposed to define one understanding and defend it with logical and good arguments. At the same time this discussion presents all the main problems of active methods of teaching/learning, which are in the course of future work studied and discussed in detail.

b) Materials

For performing this part of the program we use:

- a big poster Traditional or Active Teaching put up on the board;

- Poster 1: *Traditional* (T) or *active* (A) *school*, Appendix 1 in *Manual*;
- text *Traditional school vs. active school*, in *Manual*.

c) Division into groups

First participants work individually: they get familiar with the poster and text from Manual and then they themselves decide for: T school (variants T1 or T2, depending on the level of accepting T conception), or for A school (A1 or A2 variants), or for some combination T-A, that is 0 on the scale on poster.

Other way of division is at random. Facilitators of the seminar write equal number of notes with letters T or A, and participants take the notes. Two or four groups (of four to six participants) are formed of those who took notes T, and they have to prepare arguments in favor of T school, and those who have to defend A school are also divided into groups.

Experience shows that the second way for division is much better, because if we take the first way all participants choose A school as socially more desirable choice.

Among these groups a discussion pro et contra is organized and facilitators also participate in it.

d) Instructions

Look at the poster in front of you. In your materials you have the same poster, as well as text "Traditional school vs. active school". Look carefully, read, think and decide, on your own, for one of these two conceptions: T or A.

You can imagine a situation in which you have to make school reform you have to design a new, ideal school and you have to decide how will that potential school look like. So, your task is not to decide whether the real school is T or A, but to decide which conception T or A should desirable school be based on. You should decide what kind of school would you personally prefer and you have to back up that attitude with arguments. Do not think that we - facilitators - wish that you decided for one particular model, T or A. It is not important for us if you decide T or A, but your reasons, arguments for and against, are important. In other words, this is the way for all of us to participate in discussion about the main school problems.

e) Summary of the results

You simply state (during first division into groups) how many participants have decided for T, A or T-A. Then, a discussion is organized. If distribution of decisions for T or A is nearly balanced, then confrontation among followers T and followers A school is organized. If all participants decide for one side, all for T or all for A model, then the facilitators of seminar have to be followers of the opposite model. (When division is accidental this problem does not exist.)

f) Discussion

Goals of discussion are the following:

A) "warming up" of participants;
B) encouraging open thinking about the school that participants of this seminar live with;
C) opening important questions (what does the school look like, what are the methods of work etc.);
D) facing with the fact that the field of education is a conflict area in which interests of different groups (children, parents, country, experts, church, political parties etc.) that are difficult to reconcile are clashing, and that every compromise solution has consequences.

You should not in any case draw conclusions at the end of discussion, but on the contrary leave as many open questions as possible.

Role of the facilitators is two-fold. On one side, they are participants in discussion like others and they base their participation in discussion on their own knowledge and experience, and they do not try to look as if they know everything. The key thing in their and

other participants' performance is the value of their arguments. Role of facilitators is easier if the rule "I will be what I am" is applied. On the other side, facilitators are organizers of discussion in the group, and then their main role is to create atmosphere of tolerance for different points of view, especially, to make it possible for minor and isolated points of view to be heard, to listen very carefully to every opinion, to enable discussion among participants, to encourage substantiating points of view, to open new questions.

In order to achieve the role of an organizer in group, facilitators use following forms of intervention:

- returning questions to participants literary or in changed form ("And what do you think, what are the consequences of that point of view?" etc.);
- asking for arguments ("Why do you think like that? What are your arguments for that point of view?" etc.);
- including other participants and encouraging discussion in the group ("And what do others think? Are you all thinking the same? What are weaknesses of this point of view? What argument could be used for / against this point of view?" etc.);
- encouraging reference to the school practice ("What would be practical consequences if we apply this point of view? What would be barriers and difficulties in the attempt to apply this point of view in practice? What problems, in practice, would be solved and what would happen if we apply this point of view?" etc.);
- pointing out the problem where a certain point of view does not take care about one of the partners in educational process ("What would that mean for students for teachers for parents? Would that be acceptable for school as an institution for society, country, and their interests? etc.). See: *Useful Suggestions for Seminar Facilitators.*

In a discussion about T and A conceptions of school the following questions are usually asked:

- conception of A-school: is this only a wishful thinking and utopia or a real possibility; which aspects of that school are more attainable, and which are more utopia); if that conception is more concerned with child's interests - what about interests of society; do we have to consider them as well and how; does this kind of school guarantee necessary standards of educational attainments; is it possible to achieve A-school and to preserve subject-class master-lesson organization of school, and how to solve the problem of marking students in that school, what does the mark mean in that school, etc.;
- conception of T-school: what is the position of child in that school - does it enable attaining of goals which that conception sets for itself, or it just enables social control over students, because they are always busy with obligations and controlled by teachers; how does this school solve problem of training students for individual work, initiative and making decisions etc.;
- possibility of combining T and A school: is this combining possible without serious consequences; what should we take from one conception and what from another; how is it possible to attain some necessary curriculum if we apply active methods and mark personal progress of student, and not realization of in advance defined educational attainments, etc.;
- reality of T and A school: does the school organized on T conception exist; does the school organized on A conception exist; what conception is our school, as you know it and with what characteristics are closer to it; if A school is more desirable then why in practice T school dominates, and what are serious reasons for that; does anybody know any practically existing school that in some aspects reminds of A school.

The whole discussion is finished by pointing out the necessity for practitioners to explain the main problems of different school conceptions, by showing the biggest open questions that are formed in group and by announcement that many of these questions will be asked in a more specific way and solved in the future work of the seminar. After that the next item in the program that deals with problems of school conception, but also with the attention focused on a child's position in school, should be announced.

2. A student or a child?

a) Objective

This item in program represents transition from general discussion about conception of school to considering problems of active teaching / learning. Goals of this item are:

- to encourage thinking about the central problem of school - what does the child do in school, what is his position and why is it like that;
- to bring into teachers-practitioners' attention the things they daily do in a class and how the school as an institution handles the child;
- to open the questions that are connected with the position of the child in school.

b) Materials

For performing this part of the program we use:

- Poster 2: *Basic school formula*, Appendix 2 in *Manual*;
- Stickers or paper;
- a big of piece of blank paper, or board, or some other suitable surface for sticking papers.

c) Division into groups

Work is performed in small groups of three to six participants.

Division in groups is done by one of the methods of randomly taking numbers from a hat, assembling parts of puzzle pictures or texts, assembling associations…

d) Instructions for work

First task: *Look at the poster "Basic school formula". Think, first individually, and then as a group, if the child is a child in school, that is, the complete personality or is he just reduced to the role of a student, i.e. to someone who is learning only what curriculum, teachers and school ask of him to do.*

Begin from the real, existing school, the one that you know or in which you work, consider the time the child spends there, from coming to school till leaving it, than separate the segments of time (different lessons, forms of work, extra classes…) in which the child is only a student, and those in which he expresses himself as a child, as a complete person.

After discussion in group, write on stickers (or paper) all school situations in which the child expresses himself as a person. Please, write only one situation on each piece of paper, so that we will be able later to categorize these situations and to stick them on one board (poster, paper…). On one piece of paper you can name the situation "break" and most participants, up till now, agreed that this situation belongs to a category of situations in which the child expresses his whole personality.

On the next piece of paper name some other situation etc..

e) Summary of the results of the group work

The facilitator starts by calling one group and asks them to read from their pieces of paper some of the situations where the child is a person and on which they agreed in their group discussion. Beside these named situations groups give explanations why they think like that. If there were some disagreements in the group or separate standpoints, all this should be said. While someone from the group is speaking, one of the facilitators should sum up the given separate situations into categories and writes them on papers that will stick on a board (or other suitable surface). And by doing this, the facilitator groups, on one side of the board, categories that are connected with regular teaching.

After that, in the same way, all groups report the results of their work, by pointing out what is common with the results of previous groups and what is new, something that has not been mentioned till then.

When all groups report their results, the facilitator checks if there is something in the group that has not been mentioned, and one member from each group goes out to stick pieces of paper of his group on the board under the appropriate category.

Second task: *Now we will ask you to discuss as a group and to express quantitatively, in percents, how much, in our real school, a child is a child - i.e. a person, and to what percent is he a student.*

f) Summary of the group work

When all the groups report their results, which the facilitator notes down in the meantime, an average value of the given percents is written down and it is hung up so everybody can see it. After that we go to general discussion.

g) Discussion

The roles of the facilitators are the same as the ones described in the previous part, a role of a participant in discussion, as well as the role of an organizer of the discussion. Questions that are usually opened in the discussion are as following:

- The real position of a child in school: is a child in a school more of a person or a student (based on the marks in percents); in what life segments of our school a child expresses himself as a person (in what classes, in what academic subjects, in what extracurricular activities…); what aspects of child's personality are expressed in these segments of school life (child's individuality, privacy, extracurricular experience, emotional life, social characteristic, originality and creativity etc.).
- Does the child in school have to be a child or a student: is it necessary, because of the function that school has, for a child to be a student because that is his profession; if we want a child to express himself in school as a child, as a person, should a child be respected as a part of preventive psychological care) or because one of the school functions is also the development of child's personality, or because we want better educational effects.
- What is the nature of effect of school on a child: is it only about the arithmetical operation of subtraction, as it is shown on the poster; is that subtraction explained by development (in a sense that the child has to accept status and role of a student; does school add something to the development of a child and what (e.g., gives him systems of scientific knowledge and skills, socializes him by teaching him to accept duties, time-table, creates working habits, builds up his social skills of communication with persons that have institutional roles, not as private persons, and it teaches him to adapt to the rules of life in a social institution such as school..); what would be the easiest way to return of the child's personality in our real, present school (privacy, extracurricular experience or something completely different…) why and how; how would a more complete school formula look after adding all "subtraction, addition, multiplication, division" that the school as an institution forces upon one.

In the conclusion of this discussion, facilitators:

- summarize and connect this discussion with the previous discussion about T and A school, because each of them defines the position of a child differently (and this position is one of the main differences between T and A school);
- open questions about the kinds of activities of a child in school, that are strongly connected with the roles that the teachers have in schools of different conception, and
- open questions if it is possible to shorten the gap shown on the poster "Child - student" between the child and the status of the student in school; is it possible to make smaller the gap in A-school and how should A-school look in order to realize that.

It should be pointed out in the discussion that the role of a child and the role of a student are always, objectively, to some extent in conflict and that conflict can have positive developing effect.

3. Activities of a teacher

3.1. What are the ways of activating student participation in teaching process?

a) Objective

The goal of this part is:

- for participants (especially teachers) to clearly define all the ways of activating children in the regular teaching process;
- to come up with as many as possible little practical solutions for activating children, that could be applied in the teaching process in a real school.

b) Materials

- Stickers or paper;
- Large blank piece of paper or board or other suitable surface for sticking pieces of paper;
- Text *How to activate student participation in teaching process, in Manual* (it is mentioned to the participants at the end of this activity).

c) Division into groups

Participants are divided into small groups of three to six members by one of the methods of random selection.

d) Instructions

Your task is to think and then within your group discuss what are the ways of specific activation of student participation in the teaching process. So, you have to recall all the actions, ways, procedures that you use or that you have seen your colleges use, and the ones that could be used in this real school. You have to write down, on the pieces of paper you have got, those actions and on each piece of paper you can write only one action.

e) Summary of results

Facilitator starts by calling one group to read some of their solutions. During that, one of the facilitators classifies those solutions into the categories and writes them down on pieces of paper, which he sticks, on the board. When all the groups report their solutions, the facilitator checks if some of the solutions are left out, and one by one members of the group come out to the board and stick their pieces of paper with the solutions under the given categories.

f) Discussion

In commenting this task the facilitator should first praise the participants because they have given numerous solutions in very limited time, and you should point out that:

- in this seminar we do not bring some new knowledge, but we want to systematize the knowledge already existing in practice so it becomes a standard way of work.. That kind of practice is sporadic and unsystematized in some schools, with some teachers, in some part of curriculum;
- we begin with existing teacher competencies, and we do not forget their professional knowledge and experiences (i.e. why we call our seminar co-operative);
- we want to collect all good solutions in the teaching process (in primary school education tens of thousands of teachers work and if half of them have good solutions, those are several thousands of good effective solutions!) and to enable better communication among teachers through *Manual* (see text *Market of Ideas for Active Learning/Teaching*) and with the help of popular publications with schemes for good lessons in some subjects, by video cassettes and TV-shows with recorded good lessons (see part *Actions* on Scheme 1, in *Manual*).

To make the purpose of this task clearer, a facilitator can compare this activity with, e.g., exchange of advice, solutions, "coping" of parents with bringing up children.

3.2. How is a child / student active in teaching process?

a) Objective

The goal of this task is to point out to an extremely important thing in Active Learning/Teaching: the use of a certain type of task, method of work or content does not guarantee an active student, but we have to define conditions under which that certain type of task, method or content will be activated.

b) Materials

- paper with written list of examples of school tasks and blank space for classifying every task to T or A group;
- Appendix 6: *List of examples of school tasks*, in *Manual;*
- stickers for facilitators;
- patterns for summing the work of all groups.

c) Division into groups

Participants are divided into groups as in 3.1.

d) Instructions for work:

First task: *Tasks that are written here (show the board with written tasks) you also have in your Manual in Appendix 6. In every group you should read very carefully your tasks and classify them into T or A. Criteria for classifying tasks are the activity of child, what he/she does while solving that task, and not whether we find those tasks in regular school practice or not! We will sum up the results of all groups on this paper and you will do the same in your patterns for summarizing the work of groups that you have already got.*

e) Summary of results

In summarizing the facilitator goes from one task to another, and by doing this , first results of all groups for the first task are listed, and then it is asked from the representatives of groups to explain and support their choice, i.e. why they have classified that task in T or A or T-A group. After that, we go to the following task etc.

f) Discussion

It is important that the facilitator does not imply any special solution in the course of the discussion of group solutions. It is also important for the facilitator to encourage the participants to explain the way they came to the solution, to point out (several times) that their argumentation and logic in making decisions are more important than the final solution and that there is not one correct answer but whether it will be task T, A or T-A depends on the conditions of their application (e.g., the making of a school paper is task A if the students themselves make the design, columns, articles etc., but if the teacher does the complete design and the students only bring certain ordered articles, then this task is closer to T category).

Once all the tasks have been done in this way (it is not necessary to support with argumented decisions for each task if we have already had that type of a task), we go on to the next task.

Second task: *Now we ask you to choose from these 26 given tasks that you have classified into T and A groups, three best-T and three best-A tasks, i.e. to choose out of these 26 tasks three that, in your opinion, activate the students the least and three, which activate the students, the most.*

g) Summary of results

First we sum up the results for maximally activating tasks. This is done by calling out one group after the other and each of them says which is their choice of the three best-A tasks. At the same time one of the facilitators under the sign on the paper with MAX writes down the numbers of the chosen tasks. Once we have finished with the best-A tasks we call out again group by group and they tell us their choice of best-T tasks, and the facilitator writes their numbers under the sign MIN on the paper (minimum activating tasks). The facilitator counts up frequencies and circles with a marker three best-A and three best-T tasks.

h) Discussion

First we should look whether there are tasks which appear on both lists, among best-T and among best-A tasks, and if there are any, ask the participants to explain the logic for performing the classification. After that we should read out which are the best-A and best-T tasks according to their choice. After that the participants get the third task.

Third task: *Now I ask you to specify criteria on the basis of which you have classified these tasks into best-A. Think about it on your own, and then we shall formulate the criteria on the board together.*

i) Summary of results

While the participants are listing the criteria, the facilitator notes them down (with necessary corrections in the sense of a clearer formulation) on stickers and sticks them besides best-A tasks. The following criteria are the most frequent: meaningful activity, creativity, and the freedom of choice, independence, child initiative, the application of knowledge, the connection of knowledge. Once we have finished with the criteria for best-A tasks, we go on to the criteria for the best-T tasks, and the most frequent are: rote or logical memorizing, reproduction, models and schemes…

j) Discussion

In discussing the findings facilitator should again point out the meaning of this activity: we have tried to define A-school through the types of tasks which were characteristic for it. We could say, according to that, that A-school is the school where tasks which fulfill A-criteria dominate, and that for the traditional school T-tasks are characteristic, and reproduction and rote memorizing characterize them…

Facilitator could also ask the participants to evaluate our school according to this criteria, i.e. what types of tasks are most common in it.

Discussing the listed criteria the facilitator should point out that the list of A-criteria is varied more, it is richer and covers more aspects of personality (not only cognitive), than T-list. This should be connected with the discussion *Student or child*, and draw the participants' attention to the poster and to what is written in brackets (what the school takes from the child). Then, together with the participants list what A-tasks give back to the child.

3. 3. What roles of the teacher do we use?

a) Objective

The goal of this session is finding out what are the roles that the teacher has in school, what is expected from him in his work. All listed roles are given very precisely and operationally, so it can be discussed with more clarity and specifically about the desired things that are, real or possible roles of the teacher.

b) Materials

- Text - Inventory of teacher roles in teaching process, in the *Manual*;
- Appendix 7: *Scheme of list of teacher roles in teaching process*, in the *Manual*;
- text - Problem questions on one's own teaching practice, in the *Manual*;
- blank piece of paper with written teachers' roles for summarizing the results of work of all groups;
- a form for summarizing the results of work of all groups.

c) Division into groups

Participants are divided into groups again, using some new system of division, not used before.

d) Instructions

First task: *Please, turn the page in your manuals to the text "Inventory of teacher roles in teaching process". This text is a result of our attempt to draw out from pedagogic and psychological literature, and from the experience of practitioners all the roles that the teacher has in the teaching process. We have classified all those roles in six big categories, that are here marked with roman numbers, and they are: teacher's,*

motivational, the role of the evaluator, the diagnostic role, the role of the coordinator of social relations in class as a group, and the role of a partner in affective interaction. Please, get to know the text individually first, check these categories and see what we meant under each of them. After that you will work in groups and your task will be to recall the real school, as you know it and a typical teacher and to rank these six roles like it is in reality, and not like it should be or could be!

e) Summary of results

When all the groups are finished with ranking the roles, we go from one to another group and their rank-list facilitator puts on the board. When all the groups report their results we give them another sub-task:

Second task: *Would you please now look only at the sub-categories of the teacher's role: teacher as a lecturer, regulator, partner in pedagogic communication and as an expert, specialist in his/her field and rank these four categories like this: the first rank will again have the role that is dominant, main.*

f) Summary of results

On the big posted, blank piece of paper with teacher's roles, results of all groups are marked and after that the facilitator circles the final list according to the frequency.

g) Discussion

First we ask the participants if they had problems in group work and ranking, and what the problems were, and if they had any other comments about this task. Than the final rank-list, created by summarizing their results, is read and we start the discussion that can be organized around the following questions: should something be changed considering the frequency of certain roles, and if you should change something what would that be and why; why are some roles suppressed. You should connect ranked teachers' roles with the roles of the students, and point out that teaching and learning are two complement processes and what is happening in one determines the outcome of the other (if the teacher is lecturing, students have to listen and maybe ask or make a digression, of course if he lets them).

You should connect those ranked roles with Poster 1: *Traditional - Active School*, with the part about the roles of the teacher, as well as with the types of tasks.

4. Educational workshop

5. Methods of teaching / learning

a) Objective

The goal of this part of work is for the participants to get to know the different methods of work well, the ones that have already been defined here but from the student's point of view, not the teacher's. Possibilities of every method for activating students are specially discussed (kind, degree, if it exists in school, should it exist in school, to what extent and why).

b) Materials

- Text *Methods of teaching / learning*, in the *Manual*;
- Appendix 8: *List of methods of learning / teaching*, in the *Manual*;
- Scheme 2: The relationship between methods of teaching/learning and other parameters of instructional process;
- A piece of paper (large format) with a list of Methods of learning / teaching and sections for summarizing the work like in the Appendix 8;
- a form for summarizing work of all groups which is the same size as the big paper;
- paper with written mental process necessary in the fourth task.

c) Division into groups

In the first part of the session when we talk about every method it is not necessary to divide the participants into smaller groups, but the facilitator works frontally with the whole group.

d) Instruction

This part of the seminar is performed supposing that the participants have already read the text *Methods of teaching / learning*, from the *Manual* (all actions should be taken so that participants get their Manuals on time and read them).

There is another possibility, participants can read the text during the seminar (individual reading, given in "portions", starting from the method of learning classified in dimensions from A to E).

Instructions should have the following elements:

- this is the basis of the whole project because in its core is an attempt of changing the method of work;
- this text is not a textbook text, it is working material;
- in this text all or almost all methods (forms) of learning, that we find in school practice, are described;
- the whole process of education is seen as a form of pedagogic communication and that is why we use expression "methods of teaching / learning", because in this expression two most important participants in pedagogic communication are included (that is why it is specified in every text "activities of teacher" and "activities of student"). Naming the method teaching / learning is given from the perspective of a student on purpose, that is why we talk about "forms of learning", so it would be pointed out that this is the main problem in active school.

First task: is *discussing every method of teaching / learning*, and the goal is to find out if the participants understand what is the meaning of these methods.

For every method (category A2, C1, etc.) and sub-categories (A1a, A1b, A1c) the facilitator asks questions:

- Is there something that is not clear in this text?
- Is it clear how this method (e.g. A2) manifests in school practice?
- Does this method of learning exist in our school practice? Give some illustrations from practice.
- Does it occur rarely / often / regularly?
- Is there an excuse for using that method of learning in school? In what cases? Why? What is an excuse?

e) Summary of results

In this part the facilitator is working with the whole group, asking questions, encouraging exchange of thoughts and arguments, by taking care that every participant who wants to discuss something is carefully listened to.

f) Discussion

Justification and/or reasons for existence of method A1c (cramming) should be especially discussed. Since everybody agrees that this method appears very often in school, either as obvious or hidden method, it should be seriously considered what are the reasons for that.

Method A2 (meaningful verbal receptive learning) should also be considered: why is this method important and why should it be reaffirmed, how to make sure that in the process of teaching we have insights into what do students understand and what they do not, how can we assure understanding (text in the Manual gives basic information about that).

With methods that rarely appear (D1, C1, C2, E1, E2) we should start discussion about the reason why they are so rare in our school; in which subject they still exist and why; should they exist (this should be done in a particular way so that we would not praise these methods, not knowing what their specific role in education was).

Facilitator should not make any conclusions at this point, but motivate participants to start thinking and exchanging ideas.

After this discussion we go on to second task.

c) Division into groups

We take one of the random selection methods not used before.

d) Instructions

Second task: *Would you please in your group, all analyzed methods except the F category, put under the T or A category. The selection into categories should be done on the basis of how much a certain method activates the students in the process of learning. So the criterion for selection is whether a certain method is closer to the school conception T or conception A. If you cannot decide at some point what to select, you are allowed to have mixed categories (TA or AT). Just as before, the main task here, is the argumentation of your stand, why and under what conditions a certain method of learning leads to the activation of the student in the process of learning.*

e) Summary of results

Summarizing is done in the following way: the facilitator reads the methods of learning from a large piece of cardboard that is put up somewhere for everyone to see, and groups one by one say whether they have put the methods under T or A (or possibly under TA or AT).

f) Discussion

The facilitator asks each group to explain why they have done the selection in that way, where they were not sure, why they have put some methods under TA or AT, under what conditions is a certain method of learning T or A. By summarizing and explaining these selections, the facilitator encourages the exchange among the groups ("whether the others think like that", "whether they are sure that a certain method of learning is A"; "under which conditions of school learning is it A and under which is it T", etc.).

At the end of the discussion the facilitator points out to the beginning of the discussion (about the T and A school conception) and shows how this listing of the methods of learning under T and A is a further realization of those two conceptions, and that here we have some kind of a definition of both T and A schools that we had come to after listing the methods of learning that are characteristic for each of them. T school is the one where the following methods of learning and teaching are dominant - the facilitator then reads from the board the methods of learning that the participants of the seminar have marked as characteristic for T school. On the other hand, A school is one where are dominant the following methods of learning (again facilitator reads from the board the methods of learning that the participants of the seminar have marked as characteristic for A school. According to this, the facilitator compares (or asks students to compare) T and A school - what is characteristic for each of these conceptions: T school mostly has reproductive forms of learning, A school has forms of learning where individuality and activity of the students and variety of learning methods are greater.

The facilitator then points to the previously done classification of tasks that children solve in school to T and A tasks: *Here we already have two very concrete definitions of T and A school, this previous* (the facilitator points to the board on the wall where are summed results of classification of tasks to A and T) *by the types of tasks that we find in A and T school, and now this by the forms of learning. And in this way conceptions of school are getting clearer, we can easily recognize in practice what conception of school is used, and we can create A school more accurately - and this is what we will do in the continuation of the seminar.*

Third task*: Your following task is to evaluate what methods of learning exist in practice in our school, as well as, the ones that do not exist, or the ones that are used rarely. So, you will evaluate our real school, the one that everybody knows. You will discuss this in groups and among the methods on the board you will choose three methods that are used most often in our school, and three methods that appear most rarely.*

e) Summary of results

When the groups finish their work, summarizing is done on the same board, in the columns *has - does not have*. On methods that are dealt before (with columns "has - does not have"), each group is summarizing the work of the others. The facilitator first, going from one group to another, lists what three methods are used most often in school, and then what three methods are most rarely used, and after that he writes them on the board and insists that the groups should do the same thing with their forms for summarizing the work of all groups.

f) Discussion

Discussion is about the following problems:

- if we find the problem both in column "has" and in column "does not have" it should be discussed where this difference comes from and what are the arguments for each standing;
- other differences are also discussed and participants are asked to give an explanation for them (e.g., some of them have in mind class teaching, and they say for some method of learning that exists, and others think of subject teaching and they say that it does not exist, or some think of an artistic group of school subjects, some of scientific disciplines etc.);
- the facilitator draws the participants attention to the board where are summarized results of work for every group and asks the participants to compare columns T - A and has - does not have, and to draw a conclusion on their own what our school looks like, because the first column gives the definition of T and A school, and the second what is the practice in our school. According to this following problems are opened: where is our school from that point of view, is it really like that, why is it like that, should our school be transformed from T to A school as far as teaching / learning methods are concerned. These problems will be discussed in the continuation of the seminar.

Fourth task: *(before this instruction, the facilitator hangs up on the board the list of mental processes) Your following task is to analyze what are dominant mental processes in some forms of learning. To make this easier for you, we have made a simplified list of seven mental processes:*

- *rote memorizing,*
- *logical memorizing,*
- *thinking (lower levels, level of understanding),*
- *higher-order thinking processes (formation the phenomenon, problem solving…),*
- *creativity,*
- *social abilities and*
- *personality (affective components…).*

Your task is to choose one, maybe two, dominant mental processes for every method that we worked with up till now.

e) Summary of results

This task can be done by the facilitator of the seminar (because of the time saving). The facilitator will go from method to method and out loud, together with the members of the group, comment what process is dominant, and he will write that down in the suitable gap.

f) Discussion

The facilitator of the group points out some important connections between classification of the methods that are, by the expert evaluation of the group, most frequent in our school and the processes that cover these methods. The usual results of this work show that methods that are most often present in our school engage only the cognitive sphere of a child's personality, and even then only lower mental processes, usually the first three from the list This should be connected with the discussion *Student or child?* with what the

school takes from the child and with a question how and what can it give back to him. This, also, can be an introduction for thinking and a discussion about the connection of educational goals and methods of learning / teaching.

Alternative scenario for approaching learining methods at the basic ALT seminar

In order to make easier, more understandable, and more dynamic part of the seminar that covers the methods of active learning / teaching, we suggests that this item of the basic seminar be covered in the following manner.[30]

Participants are divided into six groups (learning methods have been classified into six dimensions, i.e. transmissive-interactive learning method) using some of the methods of random assignment. Ideally, there would be 6x6 participants, or 5x5 (sixth F dimension is omitted), but the groups can be formed according to the given conditions.

b) Materials

- Text from the *Manual* where learning styles are covered, pg. 12-28;
- Big white sheet of paper or poster paper for writing;
- Ordinary paper for writing;
- Markers, crayons, scotch tape, scissors, or other material that participants might need in the development of their presentation of a certain learning style.

c) Division into groups

The participants are divided into groups by using some new method that provides random selection.

d) Instruction

Each group receives 1.5-2 hours to prepare a presentation of one dimension in which other types of learning differ (i.e. the first group gets dimension A: meaningful- mechanical learning, the second group gets dimension B: practical - verbal learning, etc.) It is required that each group devises and prepares the presentation of its learning dimension, by using the text from the Manual, but also they should come up with their own example from the practice for each of the methods covered. They have at their disposal diverse materials (poster paper, papers, pencils, etc.) and the assistance of the facilitator. Presentation of each group should last 10 - 15 minutes.

The emphasis in presentation should be on student activities and specific forms of work permitted, stimulated and prevented by each of the learning methods. In this analysis, as an aid, parts of the text called *student activities* (found in description of each learning style) could be used. When preparation time is over, the presentations of groups from A to F dimension start. Note: Some of the facilitators should carefully note new examples and all good and interesting solutions.

After the presentation of the group work, *the new expert groups are formed*, so that one member (an expert for one dimension) from the previous groups is found in a newly formed group. The following work continues according to the previous scenario (determination of T /A forms, three most common / three most rare and the processes).

6. Goals of education and active school

a) Objective

The goal of this part is finding out the significance of the given goals in educational practice, that the goals are not only a declaration but also an important part of the teaching process, even the condition for efficient teaching. The role of goals is very important in the realization of active teaching, because we can get the real activity of the students only if we have *a clear goal* of what we want to achieve, a *content* by which we should achieve that, and a well selected *method* of work by which we want to achieve that. Through this task the participants are, in fact, practicing this very key connection goal -

30 This approach has been tried out at a seminar in Georgia with exceptionally good results. Not only that this item has been covered in an easier and more dynamic manner, but by using it, we were given a chance to enrich and supplement this part of the basic program. For example, one group in "not attractive" F dimension - types of learning compared to the degree and kind of the tools used, has drawn the key axis: who uses the tool, (the teacher or the student), and at what degree is this practice activating for students

method - content.

b) Materials

- Appendix 9: *The list of educational - pedagogic goals of school,* in the *Manual;*
- big piece of paper with educationally - pedagogic goals and predicted categories that are the same as in Appendix 9.

c) Division into groups

The participants are divided into groups by using some new method that provides random selection.

d) Instructions

First task: *In Appendix 9 in the Manual, The list of educational - pedagogic goals of school is given. We tried to list all the goals that are relevant for educational work. If you think that we have missed some important goal, tell us to add to the list.*

Your first task is to read carefully all the goals, and then to discuss within the group and to choose three goals that are most often realized in our school, so three goals that our school, as it is, manages to realize the most, and three goals that are minimally realized, i.e. the school does not manage to realize them or it does it minimally.

e) Summary of results

The facilitator first goes from group to group writing down on the big piece of paper three goals that are, according to the groups, realized most often in our school and then three goals that are rarely realized. After that he sums up the frequencies and chooses three goals from each category that are most frequent.

f) Discussion

In the discussion, attention should be paid to the goals that appear in both categories and ask for an explanation, the logic behind these opposite choices. After that, the chosen goals should be read and it should be discussed within the group whether the goals that are realized are really the most important ones in school work, or if those that are not realized are less important, less valuable goals, what is common about the goals that are realized (they usually present subject - class - lesson organization of the school work), what are the goals that are realized the least and what is the reason for that etc.

Second task: *Now we will deal with the connection between goals and methods of work, i.e. we will try to solve a very serious problem: what are the methods (forms) of work for realizing a certain goal. That will be done in the following way. Every group will get one goal and then they will choose one, maybe two key methods that are the most adequate for realizing that goal. Of course it is important to give arguments that explain your choice, why you think that is the best, most efficient method for realization of a certain goal.*

e) Summary of results

The facilitator has chosen for each group one goal, from the category of those that are not so successfully realized in our school, and that do mot make up a content of any subject in particular. In summarizing the results he goes from one group to another and asks them to say what was their goal, what methods they chose and why that method in particular.

f) Discussion

Members of all groups listen carefully to the others and comment their solutions - if they agree with the offered solutions, what they would suggest, change, or add and why. During that, if it is necessary, the possibilities and the essence of some methods are explained more clearly. It should be pointed out in the discussion how significant and important this task is, as well as that this is the work i.e. awaiting every practitioner to solve in a concrete school situation. Here is also pointed out the connection between content (sometimes even the program contents are not chosen well for the realization of some particular goals) and methods of work. This conversation about goals can be connected with the previous discussion about T and A school conception, as well as with the research about the child's position in one or the other.

7. The nature of school academic subjects vs. methods of teaching

a) Objective

The main goal of this situation is the participants' practice for making a scheme, a project. Their main task is to, through this practical exercise, connect knowledge about methods and goals of learning / teaching with the contents of some specific subjects *(domain specific knowledge)*.

b) Materials

- Blank paper for writing

c) Division into groups

For this situation we do not divide participants into groups randomly. According to the list of names and professions of the participants, the facilitator forms the teams in advance. In each team there should be a subject teacher or a teacher, a psychologist, a pedagogue (as there should be, in ideal conditions, in school). One team is made up of all subject teachers of one subject or teachers and professional consultants. As groups are formed in this way, the facilitator calls out the names of the members of each team and they organize their space for work.

d) Instructions

As you can see, different from previous situations, the structure of groups is not a chance selection. We formed the groups around the academic subject. In each team apart from subject teachers sit other colleagues and professional consultants, as it should be done in school practice during the solving of teaching problems. Your task is to make a project, scheme of active teaching / learning. First of all, you need as a group to decide for what segment of the curriculum you will make the project. You do not have to be tied up to the curriculum of only one lesson, but you have to try to perceive the whole curriculum of your subject and then to choose smaller or bigger chunks of the curriculum for which you will do your own draft. That block of curriculum can be realized on one or more lessons. During the making of the project it is advisable to use the text "Scenario for facilitating the situation 'Scenario Analysis for the ALT Lessons' " from the Manual, so that you do not miss some important problems. We mention that this should contain only basic solutions, and not detailed plan of one or more lessons.

e) Summary of results and discussion

Before the groups start to report on their projects, it is necessary for the facilitator to mention that this situation is extremely important because it represents a simulation of work in school practice and it is a direct exercise in applying the knowledge about active methods of learning / teaching. Each group reports its own scheme, project, while other participants listen carefully, ask questions, comment, and suggest some improvements or different solutions. During discussion, the facilitator takes care that all important parameters of active teaching / learning are analyzed (see the text *Making and analyzing the Scheme for Performing Active Teaching/Learning*, Appendix 10: *Reminder for Analyzing the Scenario or Performed Teaching: How is this solved?*).

8. Active school and real conditions of the schoolpractice here and now

a) Goal

The main goal of this situation is to encourage the participants to, as precisely as possible, think about concrete facts that help or interfere with the application of active methods of teaching / learning in real school and wider social environment. It is particularly important for the participants to revive their role and responsibility, i.e., what depends on them, with an emphasis on the role of the teacher.

b) Materials

- Poster with the text "Prayers", which is the motto of this situation: "Please, God give strength to endure what I can not change, courage to change what I can and wisdom to differ these two";
- papers for writing;
- envelopes with "addresses" of responsible factors.

c) Division into groups

Participants are divided into groups using some of the methods of random assignment.

d) Instructions

Your task is to discuss in groups and choose three, according to you, key, most serious barriers for applying methods of Active Learning/Teaching in practice. Evaluate real circumstances you are working under. Of course, it is necessary to give arguments for your choice of barriers.

d) Summary of results and discussion

Each group tells its own choice of barriers with an explanation why it chose exactly that one. Then, all together discuss the mentioned barriers, what their removing depended on, i.e., to whose address the demand for their removal should be sent. The facilitator takes care that the discussion does not turn into "general moaning", that there are no gross marks of someone else's responsibility ("Teachers are guilty for everything", "The country is guilty for everything" etc.), but to clearly and precisely check the responsibilities of all participants in education. During the discussion the facilitator very carefully returns the questions of their own responsibility to the participants.

Discussion about the barriers and their potential solution should be connected with the discussion about the position of a child in school from the beginning of the seminar (item *Student or child?*), because most often unsolved problems have an effect on children (dissatisfaction with the teacher, their position, lack of teaching tools and bad working conditions, quality of the teacher's education, huge curriculum etc.).

Appendix 4a

USEFUL SUGGESTIONS FOR SEMINAR FACILITATORS

The facilitator must be certain that he/she has given precise instructions to the participants. How successful the participants will be in solving a problem will depend to a great degree on whether they have understood their assignment.

- First of all, it is necessary to get the attention of the participants before giving them instructions. A suitable way of doing this is to say several introductory sentences (before the instructions!) about the activity i.e. to follow. This introduction has a triple purpose: it mentally directs the participants; draws their attention to what will be done in a short while; and prepares them for the instructions. The chances that the participants will hear and understand the instructions well will be far greater if the instructions are preceded by a few introductory sentences.
- The facilitator must give as precise instructions as possible in very simple words, clearly and loudly. The facilitator must put himself/herself in the position of the participants to see what sort of information he/she would need in order to know what is expected of him/her.
- One must always check to see whether the instructions were clear enough, are there any questions, and has everyone understood what has to be done.
- Before work in groups starts, the facilitator says how much time is given for the particular activity. A minute or two before the time expires, the facilitator can ask the groups to slowly finish what they are doing. When the given time expires, the facilitator checks to see how many groups have not completed the work and possibly gives them a few more minutes. If there is a group that is far behind, the facilitator suggests that they stop where they are and orally fill in what they have not finished in the subsequent discussion in which all groups will take part (usually follows work in small groups).

The facilitator is responsible for coordination of the discussion that follows. That requires a great deal of attention and concentration, especially in order to keep the discussion on track and to channel it, to take care about the order in which participants speak and about the time limit.

- The facilitator must see to it that all participants listen to what others are saying. If the discussion becomes "overheated" and everyone starts talking at the same time, the facilitator must interrupt the discussion until the participants calm down and then give the floor to the one that was talking when the discussion was interrupted.
- When there are too many participants who want to take part in the discussion, the facilitator can ask that they all give some sort of a signal and then have them take turns in that same order.
- It sometimes helps to check and see whether participants who wish to take part in the discussion want only to add something to what was previously said or want to turn the discussion in a new direction and to give priority to ones or the others depending on the situation.
- If a participant who rarely takes part in a discussion asks to speak, the facilitator can change the order and give precedence to this trainee, offering an explanation to the others.
- The facilitator must throughout be aware of his/her verbal and non-verbal reactions. The facilitator must be a model of a tolerant and democratic discussion, one who acknowledges all the different views of a problem. No one should verbally or otherwise react to an opinion which is different from or contrary to his/her own. In the same way, the facilitator should protect the participants who represent a minority view from the reactions of others. In such situations, the facilitator should always repeat the rule of the discussion that everyone is entitled to one's own opinion and that "minority opinions" are in fact valuable since they can reveal a different view of a problem.

The facilitator should always check to see whether there are any different opinions.

- Individual topics can be rounded off with the question, "Is there anyone else who wants to say something about this?"
- When the set time for a discussion is about to run out, the facilitator can inform the participants that there is only time for two or three more of them to speak.
- While the discussion is under way, it is good for the facilitator occasionally to paraphrase what the participants have said. The facilitator can do this when someone's discussion is inadequately structured, charged with emotions and therefore not clear enough. In such a case, the facilitator repeats in his/her own words what the participant has said, laying emphasis on the essence. This is a good way for the facilitator and the participants to check and see whether they have understood well what someone has said and avoid having some participants dispute or support something that has not been said at all. Therefore, the facilitator clarifies what has been said and checks to see if what has been said has been well understood by repeating or paraphrasing the same, whenever possible quotes others and brings out what participants have said instead of presenting his/her own viewpoints, sums up what has been said into a meaningful whole, keeps the discussion on track. The facilitator in this way serves as a model of a good participant in a discussion, who always checks to see if he/she has well understood what somebody else has said.
- It is good for the facilitator from time to time to remind the participants of the basic topic or issue of the discussion, especially in case there are major digressions, and also from time to time to sum up what has been said.
- It is absolutely unacceptable to have the facilitator present his/her own view at the beginning of a discussion, "to give the right answer," since this suppresses the activity of the participants and the potential of a discussion.
- The facilitator should avoid directly answering the questions of the participants when the question is designed to discover what the facilitator thinks about the matter under discussion. Instead of giving an answer, the facilitator can ask the other participants what they think, how they see the problem and why. In other words, the facilitator should try and avoid situations in which members of a group are engaged in a discussion with him/her and not one among themselves.
- At the close of a discussion, the facilitator sums up the presented views. The facilitator can briefly list all the raised issues, all standpoints which should be taken into consideration, repeat what a majority of participants agree on and, at the same time, stress that there are different opinions and repeat those opinions, etc. The summarizing of a discussion is also to give time for passions to calm down and participants to mentally prepare for the next activity.

Appendix 4b

REMINDER FOR FACILITATING A SEMINAR

What is this scheme for?

- To bear in mind the **structure of work** we are doing - FACILITATING a seminar;
- To pay attention to every single stage in the course of work: **goal** (why are we doing it), **duration, technique, content, place and function** of the certain stage, segment of the seminar;
- To draw attention to **the entirety** of the segment, as well as the seminar, in order not to lose track in a single stage;
- To elucidate **typical mistakes** in FACILITATING every single segment of the seminar;
- To use this as a method for **self evaluation**, which will give us precise feedback information;
- To function as **a guide and a reminder** in planning, organizing and FACILITATING a seminar.

Remarks:

- The purpose of the scheme is FACILITATING a seminar, as well as every single of its segments (T-A, Child-Student, Goals, etc.);
- It is important to have in mind the place and function of each part of the segment, because the process of FACILITATING a seminar is a model of work which participants could apply when they are in the role of seminar facilitators;
- The scheme could be supplemented.

I INTRODUCTION

1) GOALS:
- **Ice-breaking activities**
- **Creating good working atmosphere**
- **Establishing rules of conduct**
- **Mental preparation for work**

2) DURATION:

3) TECHNIQUES:
- **Tag - names (already prepared, or making them at the spot)**
- **Games of participants' introduction**
- **Promises (what is to be expected)**

4) CONTENT:
- **Introduction of participants**
- **Introduction to the topic (!)**

5) PLACE AND FUNCTION OF THIS PART WITHIN THE ENTIRETY OF SEGMENT

6) TYPICAL MISTAKES:

- **Too long**
- **Introduction to the theme is missing (what are we doing, why, general goal, organization of this type of seminar)**
- **Modification of the basic function of this part**

II DIVISION INTO GROUPS (when possible)

1) GOALS:
- Why are we using this method? Is that the best solution (optimal type of work) for realization of the segment's goal?

2) DURATION:

3) DIVISION TECHNIQUE:
- Random
- Based on criteria

4) DIVISION CONTENT:
- Connected to the segment's topic
- Unconnected to the segment's topic (numbers, pictures, associations)

5) PLACE AND FUNCTION OF THE PART WITHIN THE SEGMENT

6) TYPICAL MISTAKES:
- Too long
- Unclear criteria and principles of division

III GIVING INSTRUCTION

1) GOALS:
- Focusing participants' attention to working objective
- Clarifying and precise definition of the task
- Assigning task

2) DURATION:

3) TECHNIQUES:
- Task presented in the written form
- Task given orally
- Task written on the blackboard, large piece of paper

4) CONTENT:
- Precise definition of the task
- Time allocated for a certain activity
- Ensuring that the instruction was clearly heard and understood, do they know what are they supposed to do

5) PLACE AND FUNCTION OF THIS PART WITHIN THE SEGMENT

6) TYPICAL MISTAKES:
- Attention of participants is not obtained
- Instructions not clear and precise enough
- There is no confirmation whether the instruction has been heard or if there are any additional questions
- Too many instructions given - participants can not follow

IV WORKING ON A TASK

1) GOALS:
- Coordination with other participants in problem solving
- Actual work on a problem

2) DURATION:

3) TECHNIQUES:

4) CONTENTS:
- Monitoring participation's work
- Additional instructions and explanations
- Providing information and important facts about the topic
- Supplying books, and materials for work
- Partner (not teacher and not instructor) exchange with participants

5) PLACE AND FUNCTION OF THIS PART WITHIN THE SEGMENT:

6) TYPICAL MISTAKES:
- Lack of control or verification of what the *participants* are doing (are there any problems, do they need additional explanation or information, can they agree as a group about the method of work)
- Substantial interfering with the work of participants (dictating solutions, suggesting the way of thinking, providing a correct or desirable answer, shaping participants' thinking, leaving no space for personal choice, creativity, or making one's own decisions…)

V SUMMARY OF WORK RESULTS

1) GOAL:
- Completion of participants' work results in systematic and clear way

2) DURATION:

3) TECHNIQUES:
- Tables, graphs, listings, etc.
- Voting
- Ranking
- Posting participants' solutions on the blackboard
- Creating a common solution out of many

4) CONTENT:
- Collection of group and individual results
- Leading the process of presentation of the results (offering help, interventions with the presentation, or reactions of others on some solutions…)
- Integration and interpretation of offered solutions (reading solutions, opening some questions, connecting with previous points of program, announcing coming segments connected to the solution…)

5) PLACE AND FUNCTION OF THIS PART WITHIN THE SEGMENT

6) TYPICAL MISTAKES:
- Disorganization of summarizing the participants' results
- Lack of structure in summarizing work results (resulting in confusing and useless material)
- Lack of participants' attention while others are presenting their work (not listening to what is being said, working on their own problem, commenting previous presentation, etc.)

VI LEADING A DISCUSSION

1) GOAL:

- Defining and augmenting different viewpoints (even minor), different perspectives, possibilities, and ways of tackling the main problem of the segment (i.e. the conception of school, position of the child, etc.)

2) DURATION:

3) TECHNIQUES:

- Numerous (for example: pro et contra, role playing, simulations, discussion on possible solutions)

4) CONTENT:

5) PLACE AND FUNCTION OF THIS PART WITHIN THE SEGMENT:

Key expression because the main purpose of the whole segment can be seen in discussion!

6) TYPICAL MISTAKES:

a) Every formulated question has been answered by the facilitator (the question hasn't been returned to the group, every participant discusses with the facilitator and not the rest of the group)
b) "Laissez - faire" leading of a discussion (the facilitator doesn't interfere with the participants' discussion)
c) At the very beginning of the discussion, the facilitator provides participants with the correct answer and keeps arguing for it
d) Following the presentation of participants' work, the facilitator gives a lecture (with desirable answers for the discussed problem), but neglecting the previous participants' work, thus making it meaningless.
e) Instead of opening problems and questions around the key issue, rapid finalizing and closing of the discussion
f) Pressuring some participants to accept a certain solution, without analyzing what is behind different views
g) When participants disagree, the facilitator does not open that question, or searches for the logic behind the disagreement, but omits that without further discussion (leaving the participants confused, dissatisfied, feeling that anything goes for the solution)
h) The facilitator discusses with only one participant (usually the most active), or smaller number of participants, neglecting the others
i) The facilitator does not channel nor directs a discussion (don not allow for large digression, do not depart from the subject)
j) Not providing participants' attention for listening to others (everybody speaks at the same time, not listening to others)
k) Lack of integration of the prior work, summarizing a discussion (the questions that have been initiated, approaches to the problem that have occurred, key points of discussion, repetition of the basic emphases, summarizing "where are we now?", connecting with the discussions from previous segments, etc.)
l) The facilitator does not use the following types of interventions: paraphrasing (expressing thoughts in other words), explicating someone's position, clarifying thoughts, defining problems that have appeared, and formulating questions thus initiated, returning the questions to participants, searching for different opinions, occasionally reminding participants of the main topic of discussion, etc. (see section, *"Useful Suggestions for Seminar Facilitators"*))

Appendix 5.

PROGRAM OF A BASIC, INSTRUCTOR, SUPERVISION SEMINAR, A SEMINAR FOR SCHOOL PRINCIPALS, INSPECTORS/SUPERVISORS

Introduction

1. Traditional or Active School?

1.1 Problem introduction
1.2 Traditional vs. Active School
(work in small groups)
1.3 Why does the traditional type of teaching predominate?
(joint discussion)

2. Student or Child?

2.1. Problem introduction
2.2. Can a child be a child or only a student in school?
(work in small groups)
2.3. Presentation of work in small groups and discussion
(joint discussion)

3. Teacher's Activities

3.1. In what ways can students be activated in teaching?
(work in small groups)
3.2. In what ways is a child/student active in teaching?
(work in small groups)
3.3. Which roles of the teacher do we use?
(work in small groups)
3.4. Teacher's role between the desired and the possible
(work in small groups and joint discussion)

4. Educational Workshop

4.1. Doing of separate assignments
(work in small groups)
4.2. Summary of the group results
(joint discussion)
4.3. Comparing of the best lecture-teaching and educational workshop
(joint discussion)

5. Methods of Teaching/Learning

5.1. What does each method of teaching/learning consist of?
(joint work)
5.2. Methods of teaching - which are "active" and which "traditional"?
(work in small groups)
5.3. Can we use each form of teaching when we actually teach?
(work in small groups)
5.4. Which methods of teaching are most frequently used in our school?
(joint work)
5.5. Teaching methods and their significance
(joint work and discussion)

6. Educational Objectives and Active School

6.1. Problem introduction
6.2. Which objectives are attainable by which methods of teaching?
(work in small groups)
6.3. Educational objectives and active school practice
(joint work)

7. Nature of School Subjects and Methods of Teaching

7.1. Problem introduction
7.2. Working out of a project for the application of active methods in individual school subjects
(work in small groups)
7.3. Discussion about done projects
(joint work)

8. Active School and Present Conditions of School Practice Here and Now

8.1. Which are the basic impediments to the application of active methods of teaching/learning and how can they be eliminated?
(work in small groups and joint discussion)
8.2. What can, nevertheless, be done in the existing conditions?
(joint work)

PROGRAM OF SEMINAR FOR INSTRUCTORS OF "ACTIVE LEARNING/TEACHING" PROJECT

The main purpose of the seminar is to prepare instructors for work in schools in the N30+ network and for the further development of the *Active Learning/Teaching* Project.

1.0. Introductory part: Possible Types of Scenario for Further Development of Active Learning/Teaching Project

1.1. Analysis of three possible scenarios (pessimistic, realistic, optimistic) (work in working groups)
1.2. General discussion: How likely is each of the scenarios and evaluation of prospects for further development of the project

2.0. Preparations for Realization of Educational Functions of N30+ Network

2.1. Presentation of N30+ network
2.2. Objectives and ways of accomplishing school-based education
2.3. Participants and protagonists in this type of education
2.4. Scenario for keeping a record of the individual items of the education program
  A1. School concept (T-A)
  A2. Child or student
  A3. Teaching/learning methods
  A4. Educational objectives
2.5. Connection between the educational purposes and the purposes of the practical application of the principles of active learning at school.

3.0. Exercises in practical application of principles of Active Learning/Teaching at school

3.1 Drawing up of a project
  3.1.1. Producing of ideas and drawing up of a framework plan
  3.1.2. Discussing presented ideas and possibilities for making them operational
3.2 Analysis of performed teaching
  3.2.1 Ways of recording performed teaching
  3.2.2. Educational workshop
  3.2.3. Video recording of a lecture
  3.2.4. Comparative analyses of educational workshop and a recorded class
  3.2.5. Techniques of analyzing performed teaching
3.3. Analysis of local conditions for Active Learning/Teaching at school
  3.3.1. Listing of local educational resources
  3.3.2. Impediments to Active Learning/Teaching and how to overcome them
3.4. Documentation, monitoring and evaluation (checking, evaluating)
  3.4.1. Keeping of documentation
  3.4.2. Monitoring of the implementation of the project's ideas
  3.4.3. Evaluation of effects of Active Learning/Teaching Project

4.0. Preparations for Further Development of Active Learning/Teaching

4.1. Strategy for promoting ideas and practice of Active Learning/Teaching
4.2. Developing of a network (schools, staff, actives) as vehicles of an Active Learning/Teaching Project
4.3 Planning of work products of M20+ schools
4.4 How are innovations being introduced into education: problems and strategies (work in groups and general discussion)
4.5. Producing of ideas for further developing Active Learning/Teaching Project (brainstorming and discussion)

PROGRAM OF SEMINAR FOR REPRESENTATIVES OF MINISTRY OF EDUCATION

1) What Is Active Learning/Teaching?

1.1 Introduction: educational system and place of Active Learning/Teaching Project in it
1.2 Traditional or active school?
1.3 Child or student?
1.4 Educational workshop
1.5 Analysis of assignments
1.6 Teacher's role

2) Work of N30+ Network

3) Role of Education Ministry Representatives in Implementation of *Active Learning/Teaching* Project

3.1 Role of directors, supervisors/inspectors and Ministry representatives in the project
3.2 Local conditions for the promotion and implementation of the project's ideas
  3.2.1. List of local resources
  3.2.2. List of impediments and discussion on optimal viable conditions for the development of the project's ideas
3.3. Prospects for development of Active Learning/Teaching Project
  3.3.1. Evaluation of possible options for the project's development
  3.3.2. Production of ideas for further development of the project

Appendix 6.

LIST OF EXAMPLES OF CLASS ASSIGNMENTS	min	max
1. Making of as many sentences as possible using four given words: morning, fir, mother, sun		
2. Doing an independent overview of the material -- in the form of diagrams, patterns, posters, placards, illustrations, resumes		
3. Learning the specific terminology		
4. Active listening to a lecture and taking of notes		
5. Writing of a news story about a local event		
6. Analyzing of a new poem or novel using earlier studied analytical procedures		
7. Role playing: groups argue ideas or solutions		
8. Finish the assignment so that one version is opposite of the original text, and the other introduces something entirely new		
9. Recognizing in an extra-curricular situation of something that was studied in school (for instance, the shape of a cylinder in a piece of very thin wire)		
10. Listing of as many as possible synonyms for a particular conception		
11. Independent formulation of the necessary steps for FACILITATING an experiment verifying law in natural science		
12. Playing an instrument according to musical notes		
13. Formulating of a problem in as many different ways as possible		
14. FACILITATING an experiment		
15. Using of a library catalogue, indexes of conceptions and indexes of authors in books		
16. Repeating a lesson again with understanding		
17. A child initiates a discussion on an issue (Why do we lack electricity?)		
18. Handiwork based on a given pattern		
19. Learning of ready definitions		
20. Making a school newspaper		
21. Using of a microscope		
22. Application of rule for solving a problem (algorithm) in situations other than those in which it was discovered		
23. Comparison of two familiar conceptions which have not been studied yet		
24. Memorizing of names of states and capital cities		
25. Painting of a still life of one's own choice		
26. Defining of general rules and principles based on a larger number of examples		

Appendix 7.

INVENTORY TABLE of TEACHER'S ROLES in TEACHING PROCESS						
TEACHER'S ROLES	I RANK	II RANK	III RANK	IV RANK	V RANK	VI RANK
TEACHING						
MOTIVATING						
EVALUATING						
DIAGNOSING						
COORDINATOR IN SOCIAL GROUP						
AFFECTIVE INTERAC-TION (EMOTIONAL EXCHANGE)						

TEACHING ROLES	I RANK	II RANK	III RANK	IV RANK
LECTURER				
ORGANIZER OF LEARNING SITUATION				
PARTNER IN PEDAGOG-IC COMMUNICATION				
EXPERT IN ONE`S OWN PROFESSIONAL FIELD				

Appendix 8.

LIST OF TEACHING/LEARNING METHODS	T / A	YES/NO	PROCESSES
A) Meaningful vs. Rote Learning A1) Rote learning (memorizing) A1a) learning by heart of the meaningless material A1b) learning by heart of meaningful material learning by heart of meaningful material A1c) "cramming" (learning by heart of the potentially meaningful material) A2) Meaningful receptive verbal learning **B) Practical vs. Verbal Learning** B1) Practical rote learning B2) Practical meaningful learning B3) Learning of global activities **C) Receptive Learning vs. Learning by Discovery** C1) Problem solving C2) Learning by discovery **D) Convergent vs. Divergent Learning** D1) Divergent (creative) learning **E) Transmission vs. Interactive Learning** E1) Transmission learning E2) Interactive (cooperative) learning E2a) Cooperative teacher-student E2b) Cooperative in groups of students E2c) Teamwork E2d) Modeling **F) Methods of learning according to the type and degree of teaching aids used** F1) Learning in lab F2) Library assisted learning F3) Learning by using local educational resources F4) Computer assisted learning			

Appendix 9.

LIST OF SCHOOL'S PEDAGOGIC-EDUCATIONAL OBJECTIVES

ACHIEVED	NOT ACHIEVED		IN WHAT FORM
		1. Enabling for further learning (learning how to study) 2. Developing of esthetic taste 3. Developing of ability to resolve problems 4. Acquiring of factual knowledge in individual school subjects 5. Stimulating of motivation to learn and of intellectual work 6. Acquiring of systems of conceptions in individual school subjects 7. Adopting of know-how (methods, procedures) specific for individual school subjects 8. Embracing of general intellectual abilities of gathering and analyzing necessary information 9. Adopting of attitudes, beliefs and values systems 10. Adopting of skillful use information 11. Developing independence in learning process and intellectual work 12. Acquiring of knowledge applicable in everyday life 13. Developing of creativity 14. Developing of ability to communicate and pursue dialogue 15. Developing of awareness of one's self and ability of self-evaluation 16. Developing of ability to link knowledge in different areas 17. Understanding of natural laws 18. Ability to apply acquired knowledge in new situations 19. Learning how to handle and use equipment and instruments 20. Developing of ability for simple research	

Appendix 10.

REMINDER FOR THE ANALYSIS OF SCENARIO OR PERFORMED INSTRUCTION: HOW WAS IT SOLVED?

This is a list of parameters, problems to be watched for when planning Active Learning/Teaching. It is given in the form of questions and serves as a reminder for an individual evaluation of a scenario or held class(es). We stress that the list is **not definitive**, so that you can freely add what you consider important for the success of Active Learning/Teaching but has been left out. Another important point we would like to make is that, just as in the *Outline for Analysis of Children's Activities and Roles*, **not all** the parameters have to be in every scenario and in an equal ratio.

- Is the material ADEQUATE in terms of:
  - age
  - prior knowledge
  - children's experience...?
- Has the material been LINKED to:
  - what was studied earlier
  - experience
  - extracurricular knowledge...?
- Are the student assignments EQUALLY DIFFICULT?
- How is the TIMING of activities, while one group does one thing, what do the others do?
- **What are the INSTRUCTIONS given to students like (clear, precise..)?**
- WHAT DO individual students DO (list of their activities)?
- HOW MANY STUDENTS are active?
- How long do the planned activities last, HOW MUCH TIME is needed for them?
- Are the planned activities relevant for the studied material, subject matter?
- Are the planned ACTIVITIES and OBJECTIVES coordinated (class efficiency)?
- Has room been left for INITIATIVES, CHOICES, DECISIONS, INDEPENDENCE of students?
- Is the ATTENTION of students secured in any way other than through verbal urging?
- Does EXCHANGE take place
  - at group level
  - between groups?
- Are the results of work of all students/groups of students linked, INTEGRATED at the end? How does the scenario go about this?
- What is the TEACHER'S ROLE, what does he/she do while the students work?

- Has room been left for CORRECTIONS, if the assignments have not been done well? How can corrections be made and who makes them (the child, other children, the teacher...)?
- Are the TYPE of CLASS (analysis, systematization...), envisaged METHODS and CONTENT of work ADJUSTED? Are the planned methods adequate for the type of class?
- How has the problem of children's MOTIVATION and keeping them motivated been solved?
- Has EVALUATION of what has been done been envisaged? Who evaluates and how? Is off-hand support lent, for instance, in the form of applause, regardless of quality, or is there some higher form of appraisal, grading...?

Appendix 11.

EDUCATIONAL TV SERIES "ACTIVE LEARNING/TEACHING" Idea and Outline for Scenario

Key objective

This is to be a TV series for RTS (Radio-Television Serbia) educational TV program (it would be good if RTV Montenegro was to join in too), with the basic goal being to contribute to the modernization of education in our country. The core of the modernization is to be:

a) different treatment of the child/student in teaching;
b) application of active methods of teaching/learning.

Basically, the series is to be TV's support of the Active Learning/Teaching Project, which is being jointly carried out by UNICEF (Belgrade office), the Education Ministries of the Republics of Serbia and Montenegro, and the Institute for Psychology of Belgrade. The project is a broad and long-term drive carried out with a view to changing the quality, effectiveness and spirit of our school.

Contents

The core of the TV series is to be a practical presentation of **active school experiences**, i.e., of a school where the one who learns has an active position. The team, which is in charge of the Active Learning/Teaching Project, will keep the TV series crew informed about where they can film classes or parts of classes that are **examples of a good practical application of active school principles**. These can be educational workshops, field classes, lab classes, classes about particular problems, discovery learning, biology or ecology field trips, teaching carried out by students, a guest in class, experiences in using local educational resources, demonstrations of active use of information sources, class(es) devoted to a specific project with students presenting the results, teaching through dialogue, etc. The TV series and the Active Learning/Teaching Project are to initiate a nation-wide competition of all 100,000 teachers in the country in the fulfillment of the *active school* spirit.

In addition to this fundamental component, the series would also use additional elements to help shape the ideas and spirit of the active school:

- brief, digest information about theoretical principles of the active school (what is Active Learning/Teaching, why Active Learning/Teaching, Active Learning/Teaching in individual disciplines, etc.);
- presentation of a practical use of motivational means (short excerpts which show how individual teachers use different means to spur students and keep them motivated);
- practical steps -- means invented by teachers to stimulate students during class;
- short analyses of nicknames students have for teachers, as an indicator of how students see their teachers (giving a group of nicknames);
- parts of student lexicons, albums, diaries, children's humor, etc., which are to help create an atmosphere of a good student subculture;
- demonstration of intellectual abilities to be mastered by students (for instance, how to select three key words in a text, how to use a library catalogue or a computer data base, how to make a logical outline of a subject, etc.);
- presentation of different didactic means that help the process of Active Learning/Teaching (historical maps, historical charts, auxiliary charts, cards for making one's own data base, outline of organized conceptions for a particular topic, etc.);
- demonstration of the use of educational resources extracurricular (natural, cultural, historical, etc.);
- foreign educational TV programs about experiences of foreign schools in the application of active school principles (especially in subjects of a universal character) and experiences in the new way of treating the child in this type of school;

- programs which are a product of cooperation between the team which is in charge of the Active Learning/Teaching Project and TV RTS, in which TV is a medium for achieving the active school spirit.

Viewed on the whole, the "Active Learning/Teaching" TV series has been conceived as a creative and inter-active combination of these components in each individual episode. In other words, each episode is to have the same structural elements (naturally, they are to be differently balanced in each episode) and to communicate the same atmosphere and message. The episodes are to differ only in the concrete content.

Roles of Active Learning/Teaching Project Team

The team is in charge of the general conception of the TV series, it secures cooperation with schools, especially those of the network of 20 schools in Serbia and Montenegro, which are experimental stations for the application, and elaboration of active school ideas. The team provides ideas for the basic content of several episodes in advance, secures that its members appear in the series when this is necessary, the team cooperates with TV RTS in the making of original TV inserts for the series, provides answers to viewers' reactions, etc.

Roles of TV RTS Educational Program Department

The basic roles would be the following: media conceptions of the series, as a whole, and the individual episodes from the aspect of the TV medium, shooting on location, acquisition of educational programs which fit the spirit of the series to be used as a whole or in parts, and, which is particularly important, the TV RTS Educational Program Department would appear as a partner in the creation of the episodes based on specific features of the TV medium, as its contribution to the Active Learning/Teaching Project. The role of the Educational Program Department as a creative partner would be defined together by the team of the Active Learning/Teaching Project and the Educational Program Department of TV RTS.

What Kind of TV Series Do We Want?

- One maximally attractive for TV viewers;
- Active: one which will raise questions and issues and not only provide ready answers;
- Interactive: one which will communicate with viewers, elicit spontaneous responses and do so through inviting viewers to cooperate;
- Spirited, entertaining, interesting, provocative, visually attractive, content attractive, characterized by a good mood and atmosphere;
- Ambitious;
- Creative;
- Striking and effective, one that will be liked and remembered by viewers, especially teachers and students/students.

The team of the Active Learning/Teaching Project, for its part, would contribute to the series: new ideas about school and learning, innovational experiences in school, attractive presentations of theoretical ideas, interesting details about life and work at school, authors of innovations in education, issues which will be challenging for viewers.

Practical Problems

If an agreement in principle is reached on the production of the *"Active Learning/Teaching"* TV series, it will be necessary immediately to start resolving some practical problems such as: when would the series go on air, its duration, at which intervals would episodes be shown and what would their duration be, how to secure communication with viewers, and mutual contractual obligations (TV RTS Educational Program Department, Institute for Psychology, Education Ministries, UNICEF).

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