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STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLVIII, 1, 2003

"ASSIMILATE IF YOU CAN; ACCOMMODATE IF YOU MUST!" ASSIMILATION AND ACCOMMODATION AS STRATEGIES OF MOTIVATIONAL EQUILIBRATION[1]

SOFIA CHIRICA[2]

ABSTRACT. This study is focused on what people do, cognitively, to temporarily feel in control in some learning situations within organizational milieu. The study uses the case of implementation of a new personnel evaluation procedure (i. e. case of learning of a new routine) to explore the doing side of personality. I draw on the concepts already traditional in the cognitive approach– *schemes, goals and strategies* – to evidence *the different strategies that move people from some interpretation of the situation towards their behavioral goals.* The central idea of the study is that ***the types of goals that people set for themselves in a situation are indicative to the assimilative-accommodative nature of the process of representation of the situation.***

BACKGROUND

The mechanism of obtaining an accurate image of reality

Two lines of conceptualization have been evidenced in the psychology of individual differences, in order to describe *the mechanism of obtaining an accurate image of reality*. In the first line of conceptualization the mechanism has been described in cognitive terms. Individual differences have been demonstrated in the *conceptual/integrative complexity* (Suedfeld, Tetlock, and Streufert, 1992 as well as in the *assimilation / accommodation processes of cognitive schemas* (Block, 1982). In the second line of conceptualization this mechanism has been described in motivational terms (Pittman 1998's *need for accuracy;* Sorrentino, Roney, and Hanna, 1992's *uncertainty orientation;* or the opposite concepts such as Hunt 1963's *incongruity/ congruity motivation;* Festinger 1957's *cognitive dissonance* and Kruglanski and Webster 1996's *need for closure).*

[1] This work has been presented at 11 th European Conference on Personality July 21-25, 2002 at the Universität Jena, Germany.Babes-Bolyai University

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Assimilation and accommodation as strategies for psychological equilibration

According to Block (1982)'s reinterpretation of Piagetian theory, assimilation is to be viewed as the invocation by the individual of existing adaptive structures, schemes or scripts to process experience; accommodation is to be viewed as the formation of new (and the re-formation of the old) adaptive structures, schemes and scripts to integrate or make sense of previously discrepant elements. Cognitive structures are desequilibrated by intrusions, that is, discrepancies between the environment and the individual's cognitive schemes for processing that environment, or discrepancies between two cognitive schemes. The motivational function of both assimilation (schematizing) and accommodation (schema modifying) is to advance, or to restore *psychological equilibrium* that has as a defining feature *the integration of otherwise discrepant experience, understandings and actions.* The individual confronted with discrepancy first will seek to equilibrate via assimilation, moving on to the accommodative mode, only when given the existing schema's parameters, assimilative efforts have not achieve sufficient integration of discrepant elements (p. 286).

Motivation to be consistent: incongruity/inconsistency as a source of motivation; optimal incongruity

As Hunt (1963) suggested, if one takes TOTE *(Test-Operate-Test Exit)* feedback loop (Miller, Galanter, and Pribram, 1960) as the functional unit of the cognitive system, *incongruity* provides a basis for instigating actions and congruity provides a basis for stopping these actions. The test component of the TOTE must be sensitive to incongruity between present inputs and the existent representation (e. g. expectation). Such *incongruity could be expected to start operations of search for additional information.* This search can be said to exit when some representation become available in the storage, which is consonant with the inputs of the moment, that is, when the object, event or action is recognized; "the organism is satisfied when is fully informed" (Pribram, 1960, quoted by Hunt). *Incongruity can instigate the search within the storage for something to match the input, or the search for circumstances that lead to full information. The congruity stops this process.*

Then, the *TOTE system is viewed as a control mechanism on the basis of which a tendency emerges for doing or not doing something to reduce or raise the incongruity.*

Functioning at operational vs. strategic level of control

It was demonstrated – Jankowicz (2000) - that the knowledge required *to choose between alternative* goals is different from the knowledge required *to check whether an active goal has been achieved.*(see also, Hechausen, 1986; Hechausen and Gollwitzer, 1987; Gollwitzer and Kinney, 1989). To ask the question "are we there yet" is fundamentally different from and subordinate to the question "*should* we be trying to get there, rather than somewhere else, in the first place"? The distinction between the

two levels can be regarded as a distinction between *levels of representation* or *levels of language,* in Jankowicz's terms.

Premises of the study

1. The motivational function of both *assimilation* (schematizing) and *accommodation* (schema modifying) is to *advance,* or to *restore psychological equilibrium* that has as a defining feature *the integration of otherwise discrepant experience, understandings and actions.*
2. *Incongruity can instigate the search* within the storage for something to match the input, or the search for circumstances that lead to full information. *The congruity stops this process*. TOTE unit tests incongruity.
3. *Checking whether an active goal has been achieved,* i. e. functioning at the operational level of control *does not require access to the knowledge of the strategic level*; deciding whether the goal is worthwhile in the first place, or that some different goal must be substituted does require different knowledge: *the capacity to address the question 'why?'*

The model of satisfying framework suggests that *the active interpretive schema* of some encountered situation *represents the reference framework that assures the psychological equilibrium* of individual: i. e. *the point at which the degree of incongruity is under the level of irritation that determines the individual to do something about it*.

The objective of the study is to identify whether the point of psychological equilibrium lies at the operative vs. strategic level of the subjective control of individual in a situation as a way to measure the individual differences in their interpretive schemata. Coding the types of goal the individual seems to be concerned with, when talking about a self-relevant situation, as well as coding the integrative/conceptual complexity, and uncertainty vs. closure orientation manifested in participant interpretations may be indicative to the quality of individuals' adaptive learning in that situation.

The hypotheses

(1) There will be no alternative to a particular interpretive schema of a situation when this does not represent an element of a superodinated schema or, in motivational terms, when the subject functions *satisfactorily* only on the operative level of control.

(2) The strategic goals will correspond to the assimilation of self-evaluation experience to an *optimal interpretive schema* as well as *to* a *high degree of uncertainty orientation* as compared to operative goals.

METHOD

Collecting the verbal material.

A number of 32 teachers from the same school - with one to 10, and 11 to 35 years of teaching experience - participated to the study. An interview was conducted by an interview operator, on the topic of the management requirement to implement a self-evaluation procedure, based on a unique self-evaluation form and the work portfolio. Participants to the interview were encouraged to share their free recollection of their experience concerning the topic. Their stories were audio-recorded and transcribed. The same operator was asked to select a paragraph from each story where the action or the goal of the participant is best reflected. The selected paragraph must represent the participant response to a single main question of the interviewer. This verbal material was qualitatively analyzed to test the hypotheses.

Coding the variables

The participants' interpretive schemas. Reading the transcribed stories I first, try to respond to the question: *"What do this participant think he or she is doing?"* (in the recalled situation). The five different interpretations identified in the participant stories are the categories of this variable.

The operative vs. strategic level of control. The five interpretive schemas were classified in two categories as they seem to respond either to the question *"Am I (are we) there yet?"* or, *"should we be trying to get there, rather than somewhere else, in the first place"?* The subjects were distributed in three categories, as they try to achieve a particular goal (*operative level of control*), evaluate or choosing between different goals (*strategic level of control*), and manifesting no behavioral oriented goal (*no goal*).

The integrative/ conceptual level of interpretive schemata. Three levels of conceptual differentiation/integration were distinguished in the subject interpretations of self-evaluation situations: (1) the assimilation of the new self evaluation experience to a *general schema,* irrelevant for the subject's goal derivation and problem solving-oriented activity; (2) the assimilation of the new self-evaluation experience *to a particular schema,* relevant for only one aspect of the self-evaluation situation, and (3) the assimilation of the experience to an *optimal interpretive schema* (as compared with the management declarative description of self-evaluation procedure to be implemented).

The uncertainty orientation. Three categories of *uncertainty orientatio*n were coded as they reflect: (1) doubt involving a desired outcome; (2) concern over an inconsistency, and (3) seeking to understand an "unknown", as well as three categories of *certainty orientation*: (4) a definite statement about an action, outcome, role, etc.; (5) being involved in a routine, and (6) experiencing a predictable activity or action.

RESULTS

1. What do people think they're doing?

Out of the five interpretive schemas, the highest number of occurrences had the three corresponding to the particular interpretation, that reduces the self-evaluation situation to only one of its dimensions. Most participants think that they are striving with performance recording, or they are using an imperfect instrument/technology, or orienting behavior/selecting highly scored activities. One distinctive result is the preference of more experienced participants for "*striving with performance recording"* interpretive scheme, and the preference of the less experienced participants for "orienting behavior/selecting highly valued activities"

Table 1

The distribution of the five interpretive schemas in the two groups of teaching experience

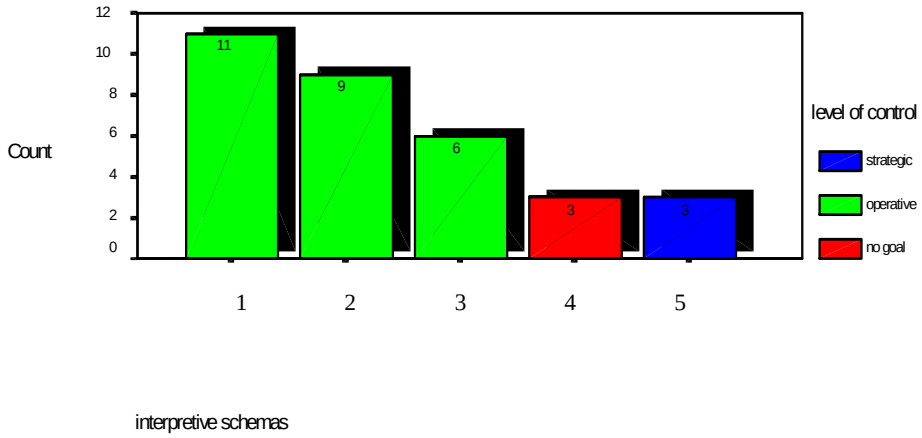
Count

INTERPRETIVE SCHEMAS	*TEACHING* *0 to 10 years experience*	*more 10 years experience*	*Total*
striving with performance recording	*2*	*9*	*11*
using an imperfect instrument/technology	*4*	*5*	*9*
orienting behavior/selecting highly scored activities	*4*	*2*	*6*
experiencing the (difficulties of) adaptation to change	*1*	*2*	*3*
enquiring the new experience	*1*	*2*	*3*
Total	*12*	*20*	*32*

2. To what question people seem to respond when talking about what they are doing in a situation:

(A) ***"Are we there yet?"***

(B) ***"Should we be trying to get there, rather than somewhere else, in the first place"?***



Legend:

1. striving with performance recording
2. using an imperfect instrument/technology
3. orienting behavior/selecting highly scored activities
4. experiencing the (difficulties of) adaptation to change
5. enquiring the new experience

Figure 1. The relation between the subject interpretive schema and his/her level of control

The three particular interpretive schemas most frequently used by the subjects in the interpretation of the self-evaluation setting – namely, *striving with performance recording, using an imperfect instrument/technology, and orienting behavior/selecting highly scored activities* - correspond to the operative level of control in defining goals.

3. The link between the five different interpretation schemes, classified in three levels of integrative/conceptual complexity and the degree of uncertainty expressed in the subject's stories

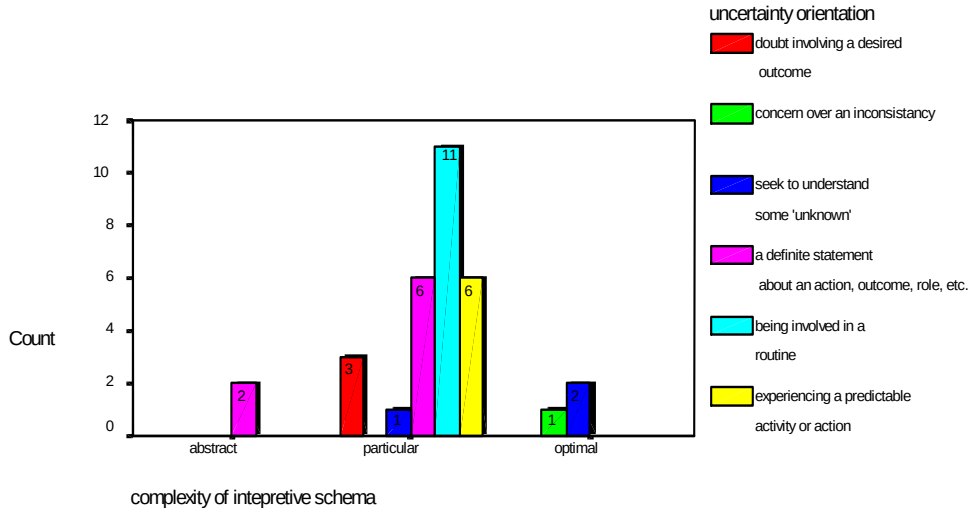


Figure 2. The relation between the subject interpretive schema and his/her uncertainty orientation

The results here are consistent with the second hypothesis of the study – the uncertainty orientation is associated with the level of integrative/conceptual complexity of the interpretive schema. The uncertainlu orientation is associated with a personal high level of significance of the interpretation of an action (x^2 : 30.32; df = 10; p = .00). All of the responses with optimal level of complexity schemas – the level that enables strategic goals - displayed uncertainty orientation features. Consistently, the interview responses scoring as abstract on the complexity level of integrative schema – the category associated with no goal formulation – had only certainty orientation categories.

Discussions

The interpretations of self-evaluation situations, classified as more particular when compared with the management declarative description of the new self-evaluation procedure, are "able" to deal with the new self-evaluation situations by assimilating them to a particular schema (i. e. without feeling the need for searching additional data either from memory or from circumstances) because there are not so many discrepant elements activated by these particular interpretations at the moment the participants talk about the topic. That this is the case, is proved in our data by the lack of uncertainty expressed in these interpretation as compared with those classified as having an optimal level of interpretation.

The *Test* component of the *TOTE* unit characteristic for the particular interpretations is not sensitive to knowledge external and superordinate to the operative level of control, simply because the articulation does not exist or is

inactive or inhibited, at the moment. As it was evidenced in the data the participants favored the self-serving interpretations of success: participants with many years of teaching experience were *satisfied* with the interpretation of "striving with performance recording" while the younger ones preferred the interpretation of "orienting behavior/selecting highly marked activities".

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STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLVIII, 1, 2003

THE PEDAGOGICAL ANALYSIS OF THE TEACHING ACTIVITY

MIRON IONESCU

ABSTRACT. This study focuses on an essential aspect of the educational process, namely teaching. The concept is subjected to an in-depth analysis from a pedagogical perspective. First, the essence of teaching is analysed from the point of view of modern pedagogy. Then, the psycho-didactic competencies that are involved in teaching and the pedagogic organisation of the didactic offer are presented.

Given its extraordinary complexity, teaching is understood and analysed as an act of pedagogic communication. Therefore, the considerations, examples and conclusions of the study may be useful for students and teachers alike.

Traditional pedagogy defines the teaching process starting from the data of empirical psychology. According to its concepts, the link between the *subject* (the *educator*) and the *object of education* (the *student*) is provided by the simple act of transmitting and receiving knowledge. The act of teaching is therefore the equivalent of the moment of transferring '*ready-made*' information from the teacher to students.

Modern pedagogy modifies the psycho-pedagogical bases of the didactic process. Teaching is not the same as telling, or perhaps, dictating and demanding the oral reproduction, during the following class, of what has been received in class. In modern pedagogy, teaching is defined in close connection with its fundamental objectives. Thus, teaching (in a didactic sense) means organising and conducting learning experiences.

Generally speaking, the management of learning experiences involves a series of operations, such as:

- presenting facts, examples, models, exhibits, reality samples
- assigning students tasks meant to explore and transform reality
- extracting the essential and condensing it into definitions, laws, principles, rules and theorems
- organising and assisting the learning activity and that of assimilating the didactical offer.

Given the complexity of the teacher's activity, this is presented in the pedagogical literature within a varied framework of concepts and processes, from among which we distinguish the following levels of analysis:

- teaching as utilisation and realisation of psycho-didactic competencies
- teaching as pedagogical organisation of the didactic offer
- teaching as an act of communication between the teacher and the students

These three analytical approaches or procedures are complementary, in continuous interaction, and the teacher is permanently trying to decide upon the most appropriate configuration.

The psycho-didactic competencies involved in the teaching activity

G. Brown (1975) has imagined a teaching activity model in which the role of psycho-pedagogic competencies has a pivotal position (Figure 1).

The transposition of intentions (pedagogic objectives) into concrete didactic activities requires the teacher to specify and define the task in terms of the necessary competencies. The teacher possesses specific activating and cognitive procedures (strategies, methods, and techniques), that have been memorised through experience and individual study. These are the elements that make up the repertoire of teaching abilities and assist the adjustment of pedagogic behaviour to specific learning situations.

Naturally, the methodological repertoire that the teacher possesses acquires a specific profile and is realised as such through current activities such as the lesson, the laboratory experiment, the co-ordination of individual study, etc. These didactic activities result into changes of the students' cognitive, affective, and procedural structures.

Box 1 Teacher's intention (the objectives)
Box 2 Concrete activities
Box 3 Memorised didactic strategies
Box 4 Teacher's perception
Box 5 Changes into the students' personality

Fig. 1. The simplified model of the teaching process

Due to their transparency, certain reactions of the students easily reach the teacher's perception, such as: mastering a notion which has been defined and perhaps introduced during the tasks; an attitude demonstrating comprehension or uncertainty/confusion, revealed by the student's non-verbal reactions, etc.

The above-mentioned author suggests the term *monitoring* in order to describe the perception as well as the pedagogical utilisation of the perceivable signals that are present in the proximity of the pedagogical relationship.

Other modifications of the student's personality, although postulated, remain concealed from direct observation (for example the volume and the profoundness of mastering concepts and operations included in the syllabus); highlighting them is the objective of systematic evaluation studies.

It is worth mentioning that the teacher's perception, monitoring and evaluation generates the range of criteria that will be applied in selecting the optimal didactic approaches and then the actual carrying out of the instruction sequences.

Summarising the above-mentioned ideas, we may point out that the teaching and education process requires increased professionalism, information and training for the conduct of the instructional-educational process as well as an increased cognitive confrontation with the wide range of learning activities and situations.

The instructional action is described as the process relationship of human transformation, and its unfolding takes place in specific conditions in which teacher's intervention, directed towards the achievement of a modification within the student's development, meets the student's own learning action. It is obvious, however, that not everything that the educator does, as an external action, will automatically have an impact upon the student's development, but becomes a condition for change only inasmuch as it succeeds in engaging the student into an intellectual effort, an affective experience as well as a volitional manifestation.

Teaching as pedagogical organzation of the didactic offer

Teaching is currently defined as transmitting knowledge and working techniques. This definition has its origins in traditional pedagogy. As shown above, contemporary research studies highlight the teacher's role of designer and manager of learning experiences.

The psychology of learning warns us that cognitive structures incorporate various information in a condensed way: representations, notions, principles, etc. regarding the objects and phenomena of the external world and the relationships among them. In addition, there are mental operations through which the cognitive subject can be engaged into the transformation of reality, including at a practical action level.

These constant characteristics (known as essential), observed through investigating a group of objects or phenomena, stimulate the person towards their synthesis and condensing into notions or laws which thus become accomplishments of the mental and practical activity and continuously feed what we currently define as *the cognitive system*.

The definitions and laws select, from the content of notions and phenomena, certain essential aspects, which are considered to be necessary and sufficient to outline the concepts. The notion is an abstraction while the representation is a figurative image characterised by a certain degree of simplification. We often associate the notions with certain images, as we do in geometry. In this case, we refer to figurative concepts, a type of mental constructs that we systematically observe in students.

The teaching activity involves various components, which can be subjected both to a logical analysis connected to the structure and the nature of the content, and to a pedagogical analysis, which considers the contribution of these components to the acquisition of learning. While the logical organisation of information is relevant to teaching methodology, the pedagogic offer assists the process of learning. From a pedagogic point of view, teaching is meant to organise a relatively reduced number of sequences into particular, concrete and diverse configurations. We describe this construction by resorting to the example of the progression which frequently characterises the lesson.

In the process of teaching, one frequently starts from ***concrete facts, natural objects or substitutes, phenomena, processes, etc., or from the simulations of these elements***. These specific facts and representations of reality serve as examples (E) which, for the students, represent the basis for investigation and mental processing. Some issues of interest in this context are the informational contribution of examples, their organisation into a certain sequence, the alternation between theoretical statements and examples, the role of diagrams and models, and so on.

The ***example*** is the concrete and particular expression or a singular case, a *prototype* of the studied notion or phenomenon, whereas the notion is the generic class or category of all referential instances. Given this relationship, the act of teaching cannot be restricted to a single example, no matter how easy or relevant that would be for the students. There are many situations in teaching when the use of a single example alters the definition of that notion.

∗ In the 6^{th} and 7^{th} grade, the serial connection of resistors is represented by resorting to linear geometry, whereas the parallel connection of resistors is represented through the geometry of the square and the rectangle. If the teacher requires the students to recognise the resistor connection type as shown in the scheme of the electrical circuit, then there is a chance that the students will provide wrong answers. This is caused by the process of superimposing the notion formed by the students on the basis of the prototype example: they associate the name of the connection type with the intuitive aspect of the geometrical figure.

In one of his research studies, T. V. Kudreavțev (1981) states that a significant number of 7^{th} grade students (23 out of 30) have generalised the textbook drawings in the process of forming the above-mentioned notions. They have assimilated serial connection with the linear arrangement of electrical appliances, showing total confusion when asked to name the type of circuit in the case of other resistors. In a similar way, when asked to draw the diagram of a parallel circuit, the students were incapable of detaching from the initial textbook picture and placed the resistors according to the geometry of the rectangle.

∗ In geometry, students perceive height as being always internal to the triangle and are confused when shown a triangle that has an obtuse angle whose height, corresponding to its sharp angles, is projected outside the triangle. In a similar way, some students are able to recognise the right-angled triangle only when it is represented in a constant position which is similar to the example provided by the teacher – with its right angle as its basis (lower left side); the square or the rectangle are recognised more easily when positioned on one of their sides, the isosceles triangle when positioned on its basis, etc.

The above-mentioned cases reflect the phenomenon of altering the definition of a notion. Within the notion, students include figurative and non-essential elements such as: "*The right-angled triangle is the triangle whose right angle is positioned down (at the basis) and to the left*", etc. The elaboration of these *personal definitions* in the student's mind is the consequence of illustrating the

concepts through an insufficiently varied intuitive material, through examples that are not sufficiently relevant to facilitate the abstraction of essential characteristics. The teacher must ensure that the range of examples allows the student to identify, as thoroughly as possible, the constant (essential) features as well as the variable (non-essential) ones, by illustrating the notion through varied and successive examples.

From a practical point of view, the range of examples is subjected to the sampling technique. In teaching, it is neither necessary nor possible to make an inventory of all instances that illustrate a concept, process or phenomenon. Therefore, the lesson is based on the selection of the most relevant examples. Out of **U**, that is the universe of all objects or phenomena (all the instances belonging to a the same category or class), the teaching sequence retains a limited number of examples, included in the sample **u**, for instance E_1, E_2, E_3 and E_4. We reiterate the requirement that the example sample (u) needs to be representative for the category that it will illustrate (U). For instance, in order to illustrate 3 as a figure and number, 3-4 sets of varied examples are useful, incorporating the same factual content.

We distinguish between the examples that illustrate directly a notion or an item of knowledge - which have a prototype value - and contrasting examples or counter-examples (*E*), which show, through opposition, what does not represent or belong to a concept. While the example (E) provides a collection of individual features, which are necessary for the purpose of generalisation and elaboration of the definition, the counter-example (*E*) represents the database for category differentiation and classification. On this basis, researchers consider it necessary that the illustration sequence of the lesson should contain pairs of examples and counter-examples (E and *E*).

For instance, explaining the thinking process (in psychology) seems to be significantly facilitated if perception is used as a contrasting notion: the first process reveals the general, the essential aspect of objects, whereas the second reflects the individual, being the image of a particular object. This option in presenting the notion of thinking requires a choice of appropriate examples.

- ***The use of cognitive users (Cg), which are meant to guide and assist the transfer of figurative characteristics towards abstractions,*** represents another important moment of the teaching sequence.

However varied and relevant the examples and counter-examples used in teaching these will not offer themselves as ready-made material to mental operations (e.g. analysis, synthesis, comparison, etc.). Concrete objects or substitutes of reality do not lend themselves to a direct mental approach. The act of cognition is not limited to the perception of concrete data.

For example, faced with a multitude of objects placed on the desk, the student cannot immediately realise the concept of number. The student does not understand the gravity law through by merely observing the objects fall; in the presence of concrete objects and phenomena, the student cannot transpose himself

or herself into the teacher's or scientist's conceptual grid. In the case of students, the organisation and guiding of the cognitive act requires the combination of multiple and various supports, including strategies for investigating, searching and identifying useful information.

In order to facilitate the mental processing of examples, the teacher must include within the teaching sequence cognitive organisers that are specific to the task and adequate to the teaching situation:

- ***Brief descriptions*** of the objects, phenomena or processes that are to be investigated (whatever is represented or illustrated through examples).
- ***Enumerating and highlighting*** the relevant information areas (what students should include into their mental processing from among a variety of concrete data and what students should omit or neglect).
- ***Explanations and hypothetical-deductive analyses*** (how a specific configuration changes if certain components are added or eliminated or if they are re-organised from the point of view of space and time, etc.).

On the basis of cognitive organisers that are accessible to the student, he or she abstracts from among the range of examples (the reduced sample, **u**, extracted from the general category, **U**) those constant (essential) features or characteristics which allow the access to the definition, generalisation and abstraction.

Systematic research in schools demonstrate that the association of the concept with prototype-examples, in the absence of sufficient cognitive organisation of learning, leads to the alteration of the content of the notions formed in students (C. Predescu, I. Radu, 1990).

To illustrate this, we will describe several common situations that are characteristic of schools.

A consecrated way of introducing notions to students is through models and diagrams, seen as figurative representations of knowledge, which share two defining characteristics: (a) the concrete character, that is the utilisation of forms and dimensions that are accessible to perception, and (b) the abstract character, which reproduces common features valid for an entire category of objects and phenomena and which are mainly accessible to mental operations. These diagrams, like models, *embody the abstract in a concrete form,* but the abstraction of certain elements that go beyond the field of immediate perception depends on the teacher's skill of assisting the student's cognitive effort.

In addition to the first example, it is important to point out that the acquisition of new notions requires the mastering of certain previous representations or knowledge (*anchor notions* or *cognitive anchors*), which provide the premises for the learning progress. We consider a certain content, a set of notions as being accessible when the benefit, the added knowledge that is brought about by learning is proportionate with the effort/practice invested; we are, therefore, interested to find out the cost of obtaining a certain result. Of course, certain more difficult notions can be acquired at an early stage but they require too

much effort and time (the relationship between effort and results is no longer linear). As the foundation of previous knowledge is missing, premature learning is often accompanied by failure, which later accounts for the resulting negative attitude towards those fields / subjects (e.g. Mathematicss, Physics, etc.).

- The investigation by students of the range of examples and counter-examples, in the context of the cognitive program guided by the teacher, ensures their access to the main components of the definition, law, or theoretical construct. The introduction of the definition or law (Df) in the teaching sequence is based on the investigation activity and the interactive involvement of students in the task.

Finally, the process of communication and of information transfer is not limited to revealing the content of the notion (through definitions, brief descriptions, etc.), but it also means situating them within the system of related notions and of course in the concepts they are incorporated within. The integration of knowledge within more complex and flexible cognitive structures requires a long series of *applications* (Ap), problem-solving in various contexts, accompanied by thematic and interdisciplinary syntheses and reviews, etc.

To sum up, the teaching activity consists of sequences, which would be formally expressed as (**E** and **E**); (**Cg**); (**Df**); (**Ap**), which represent, as mentioned before: (a) examples and counter-examples; (b) cognitive organisers; (c) definitions, and (d) applications. Thus, the teaching process articulates relatively distinct sequences, which make up a system of instructional-educational activity; the expected result is not a mosaic but a flexible structure that is sufficiently elastic to accommodate the diversity of teaching situations.

Teaching may be organised either through inductive progression – i.e. arriving at the definition of the notion or the statement of a law through analysis, synthesis and generalisation, or through deductive progression: first we introduce brief definitions or descriptions, which are then illustrated by means of specific data. These two procedures are frequently alternated and combined in various ways.

The manner of articulating and systematising knowledge can be that of incorporating it into a semantic network, or in a classification (taxonomy) based on the relationship genus-species meant to provide the student with an outline of the correlation among concepts. As J. Piaget (1965) points out, "a notion acquires a precise shape in accordance with all elements that it is opposed to, in which it is incorporated or it incorporates" (p. 87). Therefore, mastering a notion requires situating it within the complex of hierarchical relationships (genus-species) as well as horizontally (species-species). Thus, the correlation among concepts takes the form of direct information supply as in a definition, where a notion is defined through others, but also the form of contrast or opposition relationships, when the information supply appears in the effects of reciprocal clarification and precise delineation.

The observations above provide the teacher with a series of significant methodological supportive elements in using examples and counter-examples, then in "programming" cognitive organisers and introducing generalisations and so on.

For instance, examples will be selected in such a way as to provide students sufficient common characteristics necessary for generalisations and mental elaboration of concepts. In addition, counter-examples contain comparison criteria, which allow the delineation of borders between concepts that are close to each other and also lead to ordering knowledge and placing the notions into classes or hierarchies. The success of the teaching act is very sensitive to the range of supportive elements in the analysis of concrete data and the optimal distribution of cognitive organisers. If the student is offered everything on a tray (the notion in its finite form) he or she will become insufficiently interested in identifying, analysing and comparing the concrete data on which the concept was based. On the contrary, if the range of examples is merely limited to the perception level, the expected mental processing will not take place.

To summarise the above, the teaching aids are the example, the model, the slices of reality, the diagram, the descriptive and explanatory texts, the enumeration, the brief commentary, the location, the definition and the rule, the exercise and the problem-solving task, etc. In short, the teaching offer incorporates, in an interactive configuration, concrete and verbal data, instances of communication and transforming action. The way in which these aids are articulated into the teaching sequence is varied according to the nature of the task and the available resources.

We shall illustrate the above by outlining several moments in the teaching of the topic "School learning", on the basis of a descriptive text and group debate.

∗ The participants read the text "What do we know about learning?" individually. The text is the following:

– ***Learning is never complete / thorough??.***

Learning is characterised by gradual and continuous progression. Even in the case of adults, knowledge as well as other learning acquisitions (skills, attitudes, etc.) are not acquired at a certain moment. The learning indices are continuously growing if the new data is compared with previous experience and if previous acquisitions are modified according to the new experiences.

– ***Learning is individual.***

Although a group of students benefits from the same teaching offer and duration of the activity, each student will have his or her own rhythm and learning progression. Each individual, child or adult, employs specific instruments and strategies when carrying out a task.

– ***Learning is also a social process.***

Important learning acquisitions take place in groups, even when the individual is a "silent witness" to the reactions of those around him or her. The confrontation of one's own knowledge with that of the others' represents an important means of orientation, evaluation and selection in the field of values.

– ***Learning can be pleasant.***

The pleasure of learning is something that people often doubt. When adults recall their school years, they mainly remember the toil they were subjected to

rather than the pleasure or "fun" during classes. Not even today, schoolchildren do not sing with happiness when the go to school in the morning. On the contrary, many of them are cheerless and burdened.

However, learning can be simultaneously difficult and fun. Even making "mistakes" may cheer the class up. There are many situations that make students laugh in class, without any bad intentions directed to anybody. For instance, it is worth mentioning those spontaneous answers named "bloopers", which have a strong effect in class. When asked "In which order do we do the exercises on the board?", the absent-minded student replies: "In alphabetical order".

– ***Learning is active.***

Adults, parents and teachers can assist and guide individual and group learning but none of them can learn for the student. Learning means personal acquisition and requires personal effort to achieve it through systematic contact with the reality that needs to be learned.

– ***Learning means change.***

The pictorial sign used in Chinese for the word ***change*** is a combination between the symbol that signifies ***pain*** and the sign for ***possibility***.

It is true that learning may involve painful changes if we think of the situation in which an individual must restructure his or her deeply-rooted beliefs and behaviour or is confronted with new demands. The changes through learning may be perceived as challenging but they may also be discouraging and produce discomfort. (The text was adapted from *Special Needs in the Classroom*, UNESCO Project).

∗ Each statement below (1-6) is analysed individually and examples are designed to illustrate or contradict the text content. The participants produce examples by using their own learning experience or other experiences they are familiar with.

∗ Then groups of 4-5 students (participants) are formed and they discuss the statements and examples noted by each member of the team. Participants extract the implications of each statement upon the learning activity.

∗ Each group retains one of the six statements, the one that students consider most significant. The idea is developed and justified starting from the outline of a teaching scenario. A poster is made to summarise the group's conclusions. Those conclusions are then presented to the other participants.

At the end of the teaching activity, the evaluation stage may take into consideration the key aspects that the teacher has focused on:

- How can we make use of the group conclusions in the pedagogic practicum of the participants?
- What are the areas of pedagogic competence that need to be considered in the teaching of that particular topic?, etc.

The teaching process combines continuously the act of communication with the student's effort towards acquisition. The teacher is the one that initiates the dialogue, selects and structures the material, proposes and organises the

student's activity on that material, including its memorisation. By becoming actively involved in the teaching sequence, the student develops new acquisition mechanisms, methods of analysis, comparison and abstraction-generalisation, which are able to facilitate, on a superior level, the assimilation of relevant information from the concrete and verbal data that are being gradually provided.

Teaching as an act of pedagogic communication

Modern pedagogy condenses into its concepts and practical approaches data and conclusions from various fields: education theories, information technology, communication theory, pedagogic design, etc.

The teaching process involves specific ways of pedagogic communication and consequently may be examined by looking at the data provided by the general communication theory.

The diagram 2 represents the graphic model of pedagogic communication (Mayer-Eppler, 1963, A. Moles, 1974). We first distinguish the interlocutors of the teaching act, the teacher (T) and the student (S). The two positions assume, alternatively and successively, complementary roles to transmit and receive the message.

The communication relationship is mediated by the "channel", which, technically speaking, is subjected to various sources of bias or "noise".

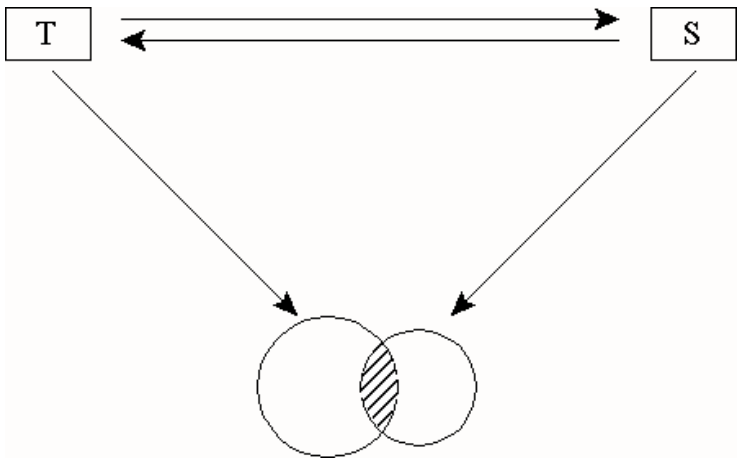

Fig. 2. The pedagogic communication model

In order for the message to function within the communication "interface" (i.e. to become a support in the teacher-student interaction), it must be transmitted in such a way as to overcome the physical and psychological obstacles that accompany the source (sender) and the recipient (receiver), as well as the channel

of communication. For instance, the message needs to be coded (a system of signs and rules for their combination) by using a code which is shared at least by the sender and the receiver. The design of the communication medium will also take into consideration such technical requirements as the accuracy of elaborating, transmitting and receiving the information.

In the diagram above, the communication interface is represented by the relationship between the two intersecting circles: one of the circles (Tr) represents the teacher's repertoire, the second (Sr) – the student's repertoire while the shaded area represents the commonly shared territory (Tr intersecting Sr) which is continuously enlarged as a result of learning. Therefore, the act of communication itself develops as an interpersonal relationship; it also involves the other types of relationship such as affinity (acceptance or rejection), leadership, and so on.

Communication theory defines repertoire as being the sum of signs in the memory of an individual as well as the logical-grammatical rules of using these signs. Apart from vocabulary, syntax and grammatical logic, the act of communication also includes variables that belong to the more general field of interpersonal relationships. For instance, the relationship between the teacher and the students has an important affective dimension.

The traditional model of the pedagogic relationship, characterised by the separation of roles: *the teacher teaches – the student learns* or *the teacher transmits – the student receives*, reduces communication to a mere monologue. By definition as well as through its functions, communication requires convergence and reciprocal openness, participation in a nucleus of shared values, which the wider social group proposes to the two elements that are in relationship with each other. In Latin, the term *comunico* means doing things together, sharing. The teacher is required to demonstrate closeness and dedication, participation, understanding and diligence. Without these areas of convergence of assumed roles and values, communication between teacher and student is precarious, even absent.

The idea of axiological convergence lies at the basis of the communication model developed by T. Newcomb, according to which interlocutors A and B discus an event X. Usually, the content of the communication between A and B is not limited to an exchange of messages or statements meant to describe or characterise the event X, although schematically speaking the act of communication seems simple (see Figure 5.III.).

The systematic dialogue between two persons (A and B) is initiated and maintained on the basis of motivations that are deeper than the mere informing or briefing. On the one hand, there is the openness, the convergence between the persons engaged in the dialogue (A – B) and on the other hand, their attitudes towards the topic (C).

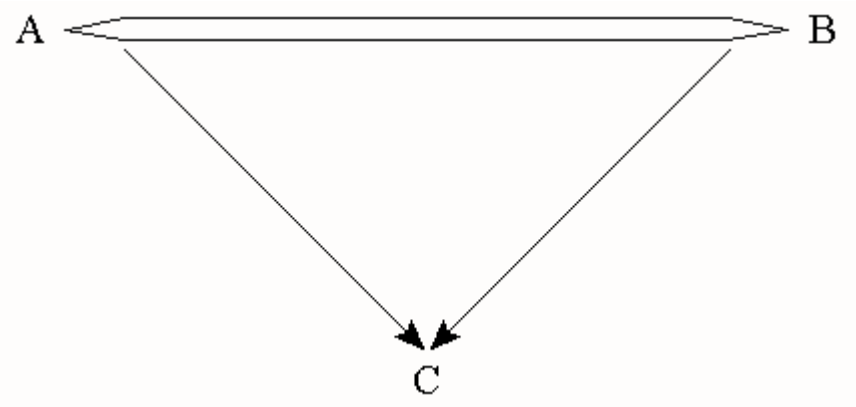

Fig.3. Convergence in communication

Therefore, communication relationships between the interlocutors are influenced by their attitudes towards the topic. Identical or almost similar attitudes ensure reciprocal openness and convergence, whereas different or opposing attitudes separate and increase the distance between interlocutors. It is worth mentioning that a circular relationship may also be established within this context: a minimal area of convergence between the interlocutors becomes the basis for the initiation and maintaining of communication, and systematic communication widens the repertoire of shared values.

To illustrate the above-mentioned relationships, we suggest a contrast example (a counter-example).

In the communication between teacher and students, there is often a gap between expectations and projections related to the task. The teacher enters the classroom having the impression or even being convinced that the proposed topic is interesting and useful for the students. Students also expect the lesson offer to cover their areas of interest and keep them connected to the planned content and tasks. However, what the teacher designs as intention and learning experience may not always produce the expected reaction of the students. Therefore, there is a mismatch between what is offered and what is received, between the teacher's expectations and the student's answer.

The factors which are responsible for the presence or the lack of convergence in the area of pedagogic relationships are diverse but they are essentially subordinated to two categories of variables:

- the logic of the teacher and the logic of the students
- their interests and attitudes, as expressions of the assumed roles as well as their future projections and aspirations.

The teacher's logic is mature, perfected, whereas the student's thinking is at various stages of development, naturally different from the teacher's. The teacher's tendency is to project into the student's head his or her own judgements but these will not be integrated automatically into the network of mental operations that the student is capable to perform.

For instance, a communication sequence during a Physics lesson in the 6th grade (reviewing the measure system) followed these stages:

∗ Teacher: Which unit is used in measuring the volume of water in a swimming pool?

∗ Student: The square metre.

∗ Teacher: Think a little bit, we are a talking about a tri-dimensional space!

Obviously, there is a lack of convergence between the mental structures of the two interlocutors. The student learns about tri-dimensional space only after the 8th grade, even later, but the teacher, who possesses the logical structure, automatically perceives it as being already formed in his students and projects it as such in their mind. Such mismatch is quite frequent in teaching and, to a significant extent, it represents the source of learning difficulties.

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FUNCTIONAL REHABILITATION - A PREMISE FOR CAREER CHOICE AND TRAINING IN THE CASE OF VISUALLY IMPAIRED PEOPLE

VASILE PREDA

ABSTRACT. Today's evolution in technology and in medical, psychological and special education sciences allowed for the appearance of new trends in the understanding of functional rehabilitaion of visually impaired people. The general principles of functional rehabilitation of the visually impaired are based on scientific data confirmed by neurophysiology, neuropsychology, cognitive psychology, developmental psychology and experimental psychology. Increasing the efficiency of the educational /vocational orientation process requires, first of all, putting into practice ways of optimising learning in the case of visually impaired persons. Vocational orientation and training is based on the subject's background, personality, skils acquired in school and through extra-curricular activities. In the process of vocational orientation of visually impaired persons, both the team members and the young visually impaired should use not only their imagination, but also great care, and a rational pedagogical optimism.

1. Objectives of Functional Rehabilitation

Functional rehabilitation, necessary for the learning and practising of a profession, allows the visually impaired to reach a higher personal, economic and cultural autonomy. Between the various aspects of functional rehabilitation there are strong interconnections which constitute themselves as an all-comprising process. This process is part of the career choice and training programme implemented in some centres/institutions specialising in the work with visually impaired people.

In order to achieve this, there are six objectives to be attained:

a) multisensorial rehabilitation leading to an efficient perception and processing of cognitive information;
b) the use of specific compensation techniques: the use of the cane, of guide dogs, of sonic guides for movement autonomy, techniques acquired through activities of mobility and orientation; the learning and use of the Braille system; the use of the new information technology;
c) the development of skills and abilities required by the various professions, as part of the training programme, or of professional reorientation (especially in the case of impairment acquired at a mature age). There is also training meant to lead to the development of the kinesthesic sense, of a great precision of gestures and of an appropriate orientation at the work place and outside;

d) individualised psychological counselling meant to shape a positive self image;
e) the preservation and development of social contacts with groups of fully abled people, in order to prevent possible feelings of inferiority and alienation;
f) the manifestation of autonomy in all every-day life situations and activities, which presupposes the discovery of practical solutions and a great flexibility in adapting.

Functional rehabilitation of the visually impaired requires the interplay of four key elements:

a) proper motivation on the part of the subject;
b) an individualised project and an environment suitable for functional rehabilitation;
c) a multidisciplinary approach to functional rehabilitation activities;
d) temporal planning of the activities.

2. Behaviour Types Targeted by Functional Rehabilitation of the Visually Impaired

Functional rehabilitation, which contributes to the achievement of autonomy, has four main target areas:

a) autonomy of movement, ensured by activities of mobility and spatial orientation;
b) developing skills of information acquisition and processing, as well as communicative skills; to this aim, the following are extremely useful: mastering the Braille system, typing, the usual reading and writing skills for the partially sighted, and the development of the ability to use some modern technical instruments, including information technology, which facilitate both communication, and the acquisition and processing of information;
c) developing some skills and abilities that involve: a great precision of gestures, an enhanced kinesthetic sense, suitable orientation at the work place and elsewhere;
d) the manifestation of independence in all contexts and activities of everyday life, which presupposes a great adaptive flexibility and the ability to find practical solutions.

The individualised temporal planning of the functional rehabilitation programme is based, to a great extent, on learning skills and on the capacity of achieving abilities involved in each person's individual autonomy. The time planning is variable, so as to allow the subject and his/her entourage to make the most of each element of autonomy achieved as a result of the various stages of functional rehabilitation. One day in the functional rehabilitation process can consist of three fifteen-minute sessions, meaning up to five hours of activity, done for several weeks or several months, function of each subject's potential and objectives.

The temporal planning also targets the subject's professional future, which presupposes, among others, the acquisition of professional skills, a change of habits, the redefinition of life objectives, and the formation of the abilities necessary for adjusting at the work place.

In order to achieve good educational and professional guidance in the case of partially sighted children and youths several criteria need to be applied. They regard the choice of learning the common reading-writing and/or the Braille one, and consist in the evaluation of the following conditions, function of which reading and visual writing can lose their specific qualities: viability, efficiency, adaptability, fatigability and sight predictions.

Based on the above-mentioned criteria, an individualised approach of the option for learning Braille and/or the usual (black and white) reading-writing becomes possible. F. Perez (1995) advances a typology for such an individual approach:

a) for a young person, having a visual stability relatively guaranteed, on medium or short term, able to read and write slowly, but without significant fatigability, the usual reading-writing is recommended;
b) for a young person, having visual stability, able to read and write slowly, but with significant fatigability, both the usual reading-writing and the Braille ones are recommended;
c) for a young person, having visual stability, a relatively high sensitivity to the required effort, able to read and write slowly, the Braille and the usual reading-writing are recommended;
d) for a young person, having uncertain visual stability, on medium or short term, able to read and write normally or slowly, the usual reading-writing and the Braille ones are recommended;
e) for a young person, having uncertain visual stability, able to read and write normally or slowly, but with significant fatigability, the Braille and, possibly, the usual reading-writing are recommended;
f) this synthesis according to type can be used for adults as well, taking into account the general profile of each subject's personality.

In all cases, the schooling and professional project should take into account the following factors:

a) if long-term study is aimed at, Braille should take precedence, in parallel with the development of quick reading and writing techniques;
b) if the career choice does not involve constant reading, a greater flexibility is allowed for, namely the usual reading-writing can be given precedence over Braille, for example in the case of kino therapists and masseurs;
c) some professions require access to reading from the computer monitor. In such cases, regardless of the length of professional training, great care is necessary and the criteria of adaptability, viability and, especially, fatigability must be seriously considered.

In conclusion, visual reading is rarely an exclusive solution for the partially sighted. The mixed solution, which gives precedence to one reading-writing system or the other, guarantees flexibility and higher efficiency. Thus, it is possible for the partially sighted to benefit, at the same time, from the results of functional rehabilitation and from the remarkable tool which is IT Braille.

3. Objectives and Ways of Achieving Functional Rehabilitation of People with Acquired Visual Impaired

Genicot (1986) proposes the following *taxonomy for functional rehabilitation* in the case of recent occurence of visual impairment:

a) *The re-learning of locomotion and mobility according to various complementary techniques:*
   - auditive tracking techniques and sound tracking training;
   - techniques of movement, gesture and kinesthetic training;
   - the technique of cane use;
   - the technique of detecting obstacles by ultrasound and laser.
   - the training of the blind in order to help them represent, structure and control the nearby space (the space of their activity); this training aims at the use of hand movements, by exercises of manual skills, ergotherapy and re-activation of previous visual representation based on tactile - kinesthetic stimulation.

In order to achieve good results in activities such as the above-mentioned ones, several stages have to be covered: training the tactile - kinesthetic sense and the fingers' exploring movements; reconstructing bi-dimensional or three-dimensional models; graphic reproduction of objects perceived by tactile means; activation and development of the functioning of mental images, based on orientation according to various angles of drawn objects; bi-manual coordination; the usual writing of manuscripts, etc.

b) *Learning Braille reading and writing and access to modern means of information technology (IT), of communication, (E-mail, the Internet)* represent important objectives for career-choice orientation and reorientation in the case of people with acquired visual impairment.

Information technology is an invaluable tool in the job-search task, and indeed in career education and guidance generally. IT is fundamental to the acquisition and development of career-related competencies. Using a range of devices from mobile telephones and computers, the handling processing of information can be made easier, quicker, more sophisticated and more productive. Using IT to provide individualised learning support, particularly through the use of specially writen software, not only enhances students’ development of life skills, but increases their motivation and satisfaction. IT not only enables acces,it also helps to support them in areas such as communication .and presentation or their work. This can have a great impact on their career work. There have been developed

software programmes able to: help students access them and suggest new ideas; provide information about opportunities; help students decide between alternatives; teach students how, to write an application or look for a job (Wright, 1997, p.131).

c) *Developing social contacts with groups of fully-abled people* is important for the prevention of inferiority complexes or of feelings of regret, which can lead to a distorted self-image.

4. Objectives of the Centres for Educational/Vocational Orientation Specialized for the Visually Impaired

The general principles of functional rehabilitation and the objectives of professional guidance centers specializing in the work with the visually impaired are based on scientific data confirmed by research done in neurophysiology, neuropsychology, cognitive psychology, developmental psychology and experimental psychology.

The research had the following main areas of responsibility: a) preparation of standards and procedures for reporting, documenting, and evaluating the counselling; b) development of strategies for staff to use in handling social situations; c) assistance in developing, describing, and implementing the system of counselling for students during the period between school and career (Appelhans, 1995, p.169). The research has proven that there are, mainly, two types of attitudes, apparently at odds, which "guide" the visually impaired in their career-choice (Schepens, 1986):

- caution, due to the inevitable limitations imposed by the impairment and by the more restricted career-choice range;
- courage and imagination, as the subjects project their reasons, wishes, aspirations, disregarding possible limitations imposed by the impairment.

Lombana (1980) suggests four factors which can affect the success of a person with disability in a given job: the ability to meet the physical demands, to accomplish tasks efficiently; not being a hazard to themselves; not jeopardising the safety of others; not aggravating the disability.

In each case, the counsellor involved in the specialised educational and professional guidance will take into account the ensemble of internal variables, regarding the visually impaired person, and of external variables, regarding his/her professional environment.

The examination of the young visually impaired is done in at least two individual sessions. It consists of an interview and a test, meant to provide ophtalmological, psychological and pedagogical information that will constitute the basis for a suitable educational and professional guidance. The vocational counselling and career educational programme offered students the following kinds of counselling and assistance (Appelhand, 1995, p. 169):

a) Counselling concerning an idividual’s visual impairment by:

- interpreting eye reports;
- checking functional vision;
- offering guidance based on a realistic estimate of particular visual problems;
- advising on a possible use of optical aids, fitting aids where appropriate, and instructing in use of the aids;

b) Assisting in the expansion of student's capabilities by:
- providing appropriate orientation and mobility instruction;
- teaching independent daily living skills, including appropriate social behaviour;
- encouraging the application of creative thinking to daily life;

c) Preparing young people for a career while in school by:
- providing information on career and training possibilities;
- advising on making career choices;
- assisting in applying for jobs or training;
- informing students of relevant social legislation;
- helping students look for training vacancies;

d) Supporting young people during training by:
- providing specialized equipment that might be necessary and suggesting how it might be installed at the place of work/training;
- developing individual plans for vocational training and advancement;
- lending any needed support at the training site;
- giving the vocational sections of the training institutions information about the special needs of people who are visually impaired.

Career education and guidance must be an integral part of the curriculum for any young person. Specific job oriented objectives are emphasised in the curriculum for all students at all school levels.

For students who are visually impaired career education should be given particular prominence because their transition from school to work is often a more complex process. To neglect the area of career education and guidance would be not only discriminatory, but a denial of the right of a visually impaired person to be included in society through participation in the labour market (Wright, 1997, p. 133). Especially in the case of blind young people, professional guidance should be specialised in the field of examination methods and techniques devised and used by a specialised multidisciplinary team. Modern multidisciplinary guidance is progressive and flexible, being based, to a great extent, on the activity of the real potential of each person, that should tend towards achieving autonomy and socio-professional achievement. Career-choice is a derivative of the subject's case history, personality, skills attained by educational training and extra-curricular activities. In the professional guidance of the visually impaired, the team members, as well as the young visually impaired must display both imagination, and caution, against a background of rational pedagogical optimism.

Economic self-sufficiency will ultimately rely upon an appropriate educational placement and this requires prudent matching of individual needs, skills and aspirations with appropriate education and training programmes (Wright, 1997, p. 123).

The emphasis on career awareness and job search skills is an essential element of the education of all young people in transition to adulthood. Students with a visual impairment demand additional support in information gathering, decision –making and self-advocacy to ensure equal access to the labour market.

Sowers and Powers (1991) quote practical examples of potential difficulties encountered in the workplace: using the bathroom, getting into and around employment sites, eating and drinking while at work, and communicating with co-workers. Specific strategies need to be devised to overcome some barriers presented by the employment world. The latter can include: lack of legislative intervention, such as enforcement of quota systems; a benefits system which creates financial risks for those attempting work and penalises those who might wish to work part-time; the state of the labour market; lack of information and support for employers (Clare, 1991; Chazal, 1999).

For young people in educational settings where work experience schemes are available, such difficulties can be identified during work placements, and aprropriate programmes devised. Close partenership between teachers, mobility officers and employers will enchance the likelihood of successful placement.

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THE TEACHERS – AS PRACTITIONERS AND RESEARCHERS

MUŞATA BOCOŞ[1], VICTOR BOCOŞ[2]

RESUMÉ. L'article traite un aspect encore controversé - la relation entre la recherche scientifique et la pratique éducative. Les auteurs s'interrogent si le professeur est-il seulement un practicien ou également un chercheur dans le domaine des sciences d'éducation?

Approach to the problem

The present stage in the development of the system of education sciences, the present configuration of the educational field and the efforts of the educational reforming make us participate in the increase of the general interest in the pedagogical research. This increase is not only natural and legitimate, but also indispensable for the actual educational context, taking into account the imperatives of the reform in education and the development in the pedagogical research, the encouragement of the educational innovation, which represent clear requirements of the reform in education.

It has became obvious that we cannot appeal anymore to over-simple procedures in solving fundamental problems exclusively by applying personal experience or to empirical procedures and ignorant speculations, often sterile. We need profound analysis, the understanding of the educational phenomenon in its very essence, the discovery of its inner causes, laws and relationships of interdependence with other phenomena etc., the prediction of its development, the identification and validation of different solutions in improving the educational practice. In other words, the rational, scientific analysis of education is absolutely necessary, i.e. the appeal to the pedagogical research integrated at present-day within the social manifestation with praxiologic value and representing a subsystem of the former. The pedagogical research represents a special kind of scientific research, a continuous process which aims to explain, understand, improve, innovate, reform and prospect the activity of instruction and education, in a systemic view, relying on the theoretical- or/and practical-applied investigation of the functional and causal relations between the components and the variables of the educational phenomenon.

The analyses and the developments worked out by the specialists in the field of education sciences, the models, the strategies and the paradigms offered by

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them, corroborated with the outstanding qualitative and quantitative progress of the software products, represent the support-elements in the pedagogical research, considered generically a strategy of continuous adjustment and self-adjustment of the educational system and process.

Although at a theoretical level the necessity and the importance of the scientific research in education are admitted, explained and proved scientifically, at a practical level-macro, intermediate (institutional), micro etc. - these are not satisfying at all. Unfortunately, we do not think that we have "to blame" only the educational system, the institutional management, the difficulties we encounter in practice, the lack of material resources, but also certain beliefs, types of behavior, attitude and mentality that prevent the development of pedagogical research as a strategy of natural action, available to any teacher. Thus, we come back to the matter in dispute. Is the relationship between pedagogical research and educational practice a matter of opposition or complementarity? Who should organize and carry on pedagogical research – only research specialists and professionals or any practitioner teacher?

Our opinion and its argumentation

We think that the answer to the question above is that the relationship between the two is one of complementarity. Furthermore, the pedagogical research may be a real factor of adjustment/self-adjustment and self-improvement of the educational system and educational activity and, on a larger scale, a real factor, a strategy of promoting the general development in education. Certainly, to achieve this we need to consider the educational institutions as authentic research laboratories, to involve and muster the individual and collective resources by stimulating the entire creative potential in these institutions and cooperating with all the implied factors to corroborate their efforts, thus reaching the premises of a real complementarity relation between research and practice. We have consequently answered to the second question: the false break and dichotomy between practitioners and theoreticians in the field of education must be removed, emphasizing thus the idea that pedagogical researches can be organized and carried on by any practitioner teacher, thus becoming a natural component of his/her educational practices. As a practitioner and a researcher, the teacher can definitely improve the educational praxis, can build an adequate perspective on the class, can evaluate objectively its performance and can establish and analyze scientifically the situations of success and failure in schools.

We support the above-mentioned facts with the following arguments in hopes of bringing the most relevant, clarifying and convincing ones for the approached issue.

➲ In practice, the education and educational research require the same qualities and competencies, and therefore the combination between teaching and personal investigation elements ensures the premises of a more flexible and creative practical pedagogy. The competent teacher’s profile includes competencies in the

research and innovation of the educational reality, which, in the context of the reform of education, are more and more demanded. It provides the means of overpassing routine, conservatism, dogmatism, boredom etc., and it makes the process of education more efficient.

➲ One of the general goals of education is to form the investigation and scientific spirit in pupils, the respect towards science and scientific data. Or, how can this happen if the teacher himself is not an investigative person open to the new, to the research work, if he is not a researcher and does not offer "living" examples of research sequences? Only a teacher involved in such individual and teamwork research activities will be efficient in teaching the others what authentic research means.

➲ The pedagogical researches have a reflective dimension, they promote reflective thinking and reflective teaching and different international programs have shown the superiority of reflective teaching versus simple teaching, almost technical, traditional. The reflection on educational practices has a major contribution to the increase of the quality in the teaching process, to better performances in the instructional process and to greater efficiency, aiming at formal, nonformal and informal educational contexts, at the same time (M. Bocoş, 2002).

➲ These tree types of reflection related to the present moment and its circumstances, as well as to future moments – reflection about action, in action and for educational action, careful investigation of one's own educational acts contribute decisively to the shaping of the teachers' reflective, independent and critical thinking, to the development of their reflective intelligence, interpersonal intelligence, thus reaching their autonomy. This must not be understood as a total independence or complete freedom, but as the capacity of making pertinent choices related to the pedagogical behavior: educational strategies, organization forms of the educational activity, methods, mental and material instruments put in practice, content progress, class management etc.

➲ Reflections about, in and for action imply on-going self-reflection, self-observation, self-assessment, self-knowledge, self-analyzing, self-enquiry, self-evaluation, self-criticism, self-planning etc., and a continuous improvement of the applied educational practices. In fact, from the moment they accomplish these reflections and ask such questions as:

- "*What* is/ does...mean/is understood by.../ could be obtained...?"
- "*Why* have we come to these results/ has this happened/ have the students reacted like this...?"
- "*How* do we operate with the concept/ could we act in a different way/ do we explain these observations, the level of the performances and the results we obtained/ could we improve the results/ could we correct mistakes, remove confusion, gaps...?"
- "*Which* were the strong and the weak points of the applied strategies/ were the typical mistakes of the students/ were the confusions made by the students/ were the gaps noticed at the students...? "

-"*What virtues has* the strategy/ method/ technique/ instrument...?"
-"*What servitudes* has the strategy/ method/ technique/ instrument...?"
-"*With what can we correlate* the idea/ the methodological orientation, suggestion...?"
-"*What are the consequences* if we apply this method/ technique...?" etc.,

the teachers get practically involved in more or less important experimental investigations related to finding the most efficient ways of organizing the students' learning experiences.

➲ The rigorous organization of the students' learning experiences, the careful selection of the modalities the information is encoded, the knowledge of the students' way of learning and their varied styles and combinations of learning styles they practice contribute ultimately to the improvement of teaching, to the discovery of the most efficient teaching ways and to the development of pedagogical aptitudes. If the research is well conceived, designed and controlled, we can definitely assert that there are positive mutual interrelationships between the research and teaching approaches. They support, shape and develop each other, combining into an integrating evolutive unity, providing thus the education continuum in space and time.

By doing research and carrying on experiments, the teacher will contribute to the decentralization of the authority and to the gradual development of his/her autonomy, both in teaching and research, achieving confidence in his/her own potential as a researcher in education sciences, in his/her own observations, findings, results, analyses, interpretations, generalizations and educational conclusions. In fact, as a direct participant in the educational act (L. Cohen, L. Manion, 1998), as a complete participant (P. Iluţ, 1997), the teacher knows and understands the best the educational context, the characteristics of the teaching situations, their minute aspects which (s)he can analyze from multiple points of view. Consequently, he is the one to give appreciation, qualitative and quantitative, to judge the results and the efficiency of the educational process and, of course, to improve it. Thus, the teacher must be invested -and must invest himself- with authority and expertise in his teaching and researching activity perceived as an authentic continuum in time and space.

➲ Research-action, a kind of research recommended by specialists, is in perfect agreement with the teacher's position in school, who is a practitioner in the educational field and who can easily become a researcher, getting involved in the development of the educational process and analyzing carefully the effects of his attempts.

In practical research-action, researchers monitor their own educational practices in order to develop their own valuable judgement and practical reasoning. Thus, the practical research-action is the step towards emancipation research-action in which the researchers themselves "are responsible for the Socratic role of assisting the group in its collaborative self-reflection" (L. Cohen, L. Manion, 1998, p. 190).

➲ Any pedagogical research can be, willingly or not, an opportunity for change, renewal or innovation. Pedagogical research and innovation represent two

complementary actions in analyzing, explaining, interpreting, understanding, changing and transforming optimistically the educational reality. A pedagogical research generally ends by suggesting changes, renewal or innovation, based on scientific grounds. On the other hand, the implementation of an authentic innovation must be based on sound pedagogical researches. What we consider important is the individual element, the awareness and the inward change necessity, the desire to make positive changes in his/her educational attempts and to continuously improve his/her activity, all this related to the teacher's personality.

The reform in education, representing a macro-educational innovation of all structural and functional components of education, is carried out in the classroom, by conjugating the efforts of those directly involved in the educational process, and by ensuring relations and interrelations among theory, practice and research, as well as teaching, learning and research. The reform must begin with the teacher, who accepts it and assumes it, otherwise it remains formal. Therefore, before speaking about the students' education within the context of the reform, we should speak about the teachers' education in the spirit of the reform.

Recommendations for organizing and carrying out pedagogical researches

- Reflect on the strategies and their components you mostly apply in your classes with good results. Identify those modalities for optimizing the respective educational practices, new connections, and new pedagogical variants.
- Select the research topics from the problems you are concerned with, you have applied and pursued straightforwardly.
- Think of the way you present the theoretical and experimental aspects of the selected issue so that your work will be useful for the teaching staff and other categories of people interested in education, through research accounts, scientific papers presented at scientific conferences and methodological activities, research studies and articles, theses for obtaining the first degree in teaching, books and so on.
- Ask yourself how you can quantify and measure certain characteristics, dimensions or states of the investigated phenomena.
- Compare certain actual personal educational approaches to those worked out by other colleagues.
- Do not overlook the possibility of carrying out the pedagogical researches in intra- or interdisciplinary teams.
- Adopt discernment and critical attitude in using the reference material sources.
- Show an active analytical and critical spirit, flexibility, courage and boldness in drawing up the research matters and research hypotheses.

- Direct yourself towards applied research-actions to collect data about your own practices, analyze and interpret them, and subsequently, accept, achieve and assume changes, renewals and innovations.
- Try to make meta-analyses in order to synthesize the data of certain research works.

Conclusions

The direct participation in the educational research work, the opening up of the teacher's own potentiality of imagination and creativity can only have beneficial effects upon his/her continuous training and self-training and a positive impact on the general formation of his/her personality. Certainly, it is necessary to provide a minimum training as concerns designing, organizing and bringing about the pedagogical researches (especially the methodology used), as well as a continuous training in this respect. Due to the complexity and specificity of the research act, the improvement by the research work is essential, efficient, performant.

Every stage and sub-stage of the research work turns to good account the availability for research, specifically practices and models certain structures and functions – psychical, intellectual, actional and volitional. The scientific approach to research brings together the researcher's intellectual, actional and affective-volitional resources, his entire imaginative, creative and inventive potential by cultivating the spirit of initiative, specific investigation and innovation. Thus, it is of paramount importance to develop and self-develop the investigative spirit specific to the educational field, the desire and pleasure to investigate and the confidence in both our own possibilities of investigation and research and our particular qualities as researchers.

The beneficial potential effects – direct and indirect, immediate and cumulative, professional and human – that belong to the pedagogical research are difficult to be counterbalanced by other aids or forms of activity.

The beneficial outcomes, "the profits" for the teacher-researcher as concerns his/her profession are the extension of human knowledge, the effort for self-development by receiving the positive teaching experience, by taking it over, adapting creatively and reevaluating it in the personal educational practices, the reference of the recent data to the own experience and the other way round, the reference of the own teaching experience to the other experiences.

More valuable are the formative outcomes, which refer to the opening towards novelty and the progress of research, to the embracement of new active and critical scientific attitudes towards the educational reality and new pedagogical behaviors, the qualitative change of some mentalities. We should also mention the role of the teaching staff played in cooperation within the intra- and interdisciplinary-type research team, which help them "to clarify and extend their ideas through dialogue … learn the techniques for collecting, sharing and analyzing

data about their practical problems" (L. Cohen, L. Manion, 1998, p. 191), for a complex approach of the educational phenomena.

Accordingly, it is necessary for the teachers to have a sound theoretical and practical pre-service and in-service training oriented towards designing and carrying out pedagogical researches, their ability as researchers in the field of education, respectively, within the two subsystems of the teachers' training: the pre-service and in-service ones. At the same time, it is not of less importance to defeat reticence as concerns the application of certain strategies, practices, methodological attitudes, to educate ourselves to overcome the reserves, inhibitions, fearing or even the feeling of being afraid what we encounter with regard to the pedagogical research and the new. Thus, alongside of the teachers' continuous training on the line of pedagogical research, it is essential their continuous self-education to design and carry on pedagogical researches, as well as to produce, accept and introduce educational innovations.

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LEARNING CONCEPTS

ION ALBULESCU

ABSTRACT. The present article approaches the complex topic of learning concepts as a condition of the teaching activity. We point out in this study the importance of the process of accurate realization of comprehension of the content and of the breadth of the notions, and also the continuity of the process of reflection on the possibilities of pedagogical intervention to ensure the optimal realization of higher order operations: abstractization, generalization, synthesis etc. Instruction centered on the learning of concepts must observe certain exigencies so that the manner of mechanical learning is avoided; to this end the most efficient strategies are based on deductions or inductions. It is extremely important to keep in mind in teaching the age at which students are able to operate with concepts that have no direct connection to the immediate reality. If the learning of concepts is forced on students before they reach the stage of development when they can think logically and abstractly the entire process of understanding can be upset and the student may be forced to merely memorize something that he cannot understand and to accumulate lax. The intellectual trajectory of such a student will not be the continuous one in which knowledge is connected naturally but a steep one in which learning occurs in leaps. By calling attention to the importance of learning and clarifying concepts, the article pleads for increased attention to be paid to this element that underlies the entire system of knowledge of the students.

Knowledge can be acquired and transmitted only by means of concepts which synthesis and essentialize information in certain field of domain of sciences. At the level of common sense humans recreate the world based on their every day experience. Above all however rises conceptual architecture, the outcome of thinking which can be abstractize and generalize. The empirical representation is replaced by abstract conceptualization, which make possible a superior level of knowledge of existence, more profound and comprehensive. The diverse reality, sometimes confusing and limited, which makes the object of empirical representation is translated into concepts as products of thinking that suggest a personal intellectual structure for the investigation of the world. In front of common sense there is the power of thinking in concepts. The basic unit of thinking, concepts, integrate in their content data above the general and essential features of objects, phenomena and processes. Any science is based on such integrative synthesis which express the intelligible structure of the real, facilitate understanding and meaningful communication and if the core of each science lies in a coherent system of concepts, then learning of that science must begin with the accurate acquisition of those concepts.

From the educational perspective the learning of concepts is the way of access to a certain domain of knowledge. In the learning of any content the concepts must be known and understood clearly because they serve as the basis of hire order forms of learning. Due to the very fact that they are the "basic blocks of any discipline" in the school curricula the teaching tasks are laid down in terms of the notions that must be learnt by the students (Hans Aebli, 1973). Instruction becomes possible by the learning of notions which allows for the subsequent improvement of training, according to Robert M. Gagné (1975). Once the basic notions are acquired the student is ready to increase his knowledge to deepen and improve his intellectual processes (we should point out that for logicians such as I. Petrovici, Gh. Enescu, P. Botezatu the term *concepts* is often considered a synonym of the term *notion*.).

Scientific knowledge is expressed in a specific language which is different from common language. Some of the concepts are borrowed from the common every day language while others are specially developed. A significant part of the language in a scientific theory is nothing but technicization of the natural language which seems to be "the source of all types of language" (Adrian Miroiu, 1981, p. 122). Use of natural language in different domains of knowledge, accompanied by a semantic explanation of the terms and a better logical coordination of the basic statements led to the construction of the languages of sciences and of social sciences. Within school based learning there is a shift from empirical concepts, which are common to every day language, to the scientific ones. The empirical or "spontaneous" notions, as J. Piaget and L. S. Vîgotski called them gained from unorganized daily experience, change into concepts. Before being scientific, under the pressure of circumstances knowledge is empirical, points out L. S. Vîgotski, who reaches the following conclusions "learning of scientific notions relies on the notions developed in the process of the child personal experiences" (1972, p. 159). As a result of learning a familiar but vague concept is replaced by a new, accurate, one, the replacement of the one used in every day life or at an early stage of development of formal thinking, with a scientific one.

Before thinking in concepts and abstractly, the child is anchored in the concrete. He possesses a series of notions of the common language which he can apply in different life situation. These are the results of knowledge acquired to direct contact with every day realities, a pre-conceptual type of knowledge based on intuition and centered especially on a particular state. Their use lacks in the precision that characterizes the use of the scientific concepts because they include concrete, particular, accidental and unessential features which are the result of a mostly inductive and analogues logic and which does not confer them precise meaning. On the other hand scientific notions reflect essential characteristics of reality which is why their meaning is much more precise. The child possesses a set of pre-conceptual, pre-scientific notions, which school learning will correct in time. Thus the results of spontaneous thinking will gain a rational formulation.

Any concept is doubled in comprehension and extension. Comprehension includes the ensemble of intelligible qualities of the reflected reality, as essential constitutive features which can be found in objects that, by this, make up a class. It is the one that constitutes the concepts in the virtue of the triad: essence, necessity, universality. Extension shows the ensemble of object the possesses those features and hence to which the concept applies. The learning of notions as pointed out by D. P. Ausubel and F. G. Robinson(1981), lies in the identification and correct realization of comprehension (content) and its extension (sphere) which for students is a rather difficult enterprise. As we have shown before, one of the first major intellectual tasks of a student is to learn concepts, by which he can access knowledge of the self and of the world, conserve and reproduce knowledge. D. P. Ausubel and F. G Robinson make a clear distinction between learning and forming of notions (concepts): learning means the process by which "older children and adults learn the meaning of a notion by contact with its verbal definition or by encounter in a certain verbal context", while the forming shows the process of discovery by the child of the general and essential characteristics that identify a class of stimuli so that starting from this he reaches the definition of the notion and its connection with other notion (1981, p. 71). In school instruction the learning of a notion means taking it over as it is verbally transmitted by the teacher or encounter in a written source, and integrating it in one’s own cognitive system. The forming of notions is a process in which the student draws out the essential qualities of a class of objects and incorporates these attributes in a complex image which makes up the meaning conferred to that notion. Other psychologist considers that such a distinctions is artificial. "Except for a few small semantic differences the terms of learning and forming concepts essentialize the description of the same complex process, just like sometimes pedagogically speaking by the forming of concepts we mean especially the process of acquisition…" (Ioan Neacsu, 1990, p. 274). If we carefully analyze the position of Ausubel and Robinson we find that, in fact, it is about the distinction between learning by simple reception and learning by discovery. In school activities the learning/forming of concepts is done by using several strategies and cognitive styles: by listening to verbal utterances made by the professor, by independent reading and re-construction based on previous personal experience (independent discovery).

When the information is transmitted verbally by the professor in the lesson the learning/forming of notions is based on the transfer of meaning. The teacher simply presents a generalization and defines it in a synthetic formulation of its specific attributes. According to Ausubel and Robinson while in young children the learning/forming of notions is connected to inductive generalization, starting from their concrete experience, in older student's notions can be learnt by assimilation because they are capable of sensing directly the relations between abstract things, without needing the concrete, empirical, support. In learning by reception students will operate directly at the level of abstract understanding which is superior to the

intuitive level. Once in the logical stage of the development, they are able to learn ideas (concepts) that have o immediate connection to the empirical reality, and to operate with them mentally. Now it is possible to lay learning on abstract, verbal, basis. The new notions are integrated by each in their own cognitive structure so that their meaning is associated, correlated, with previously established meanings. According to Ausubel and Robinson, in their attempt to retain, students can proceed in two ways: a) if they try to remember the notion by linking it to what hey have known and giving it in a way a meaning, then there is conscientious leaning; b) if they are contained to memorize without linking to previous knowledge, then there is mechanical learning. Students can strive to learn precise unequivocal meanings or they can be contained to passively take in notions which will remain vague and diffuse, the two author's state. They can try to translate the new notion into a terminology that is consistent with their own vocabulary and set of ideas or they can simply incorporate as it has been presented to them. Obviously it is preferable, when new concepts are presented, that the teacher moves from what is known to what is unknown, putting to best use the students knowledge and experience as a support for understanding and interpretation.

In a sequence of instruction focusing on the learning of a concept, the teacher presents it, defines it and, if possible, indicates concrete situations in which it can be applied and later develops the conditions for the realization of transfer. In this activity he will try to involve the students actively. They must not be limited to simple reception; on the contrary, in learning/forming of concepts they can start from examples, data and concrete facts in order to reach through analysis, synthesis, generalization and abstractization, the definition of the concept which thus becomes their own mental construct, and learning becomes a truly formative process.

In the process of instruction students get to know concepts either by deductions or by inductions. When the deductive way is used for the learning of a concept, the defining features of a class of objects are not discovered starting from particular phases, but rather presented on the form of definitions. Starting from definitions students understand the particular case to which they refer by means of a transfer of meaning from the general to the particular. In a philosophy lesson, for instance, truth can be defined as follows: "Veritas est adaequatio rei et intellectus". As concerns our statement we consider that the definition is true if it is in agreement with reality. We formulate the following thesis: truth is the agreement of thought and reality; it consists in the agreement between an enunciation and a sate of facts. Starting from the definition, a particular enunciation (E1, E2…En) will be judged as true depending on the above mentioned agreement. The inductive way involves the identification and selection of characteristics that are shared by objects, phenomena, processes, facts and actions, which are then generalized for the entire class to which they belongs. Let us take the example of the philosophic concept of "justice", for the learning of which we can start from the identification of particular situations in which it is applied: to show the observance of laws,

respect of legal rights of a person, asses the way in which goods are distributed in society or if each individual is treated as they should. We find that this concept of "justice" applies to a broad range of situations in which we are faced with conduct or social organization, with rules and procedures. We can therefore consider that justice refer to aspects of human existence by regulating exchanges, relations and functions, by introducing a system of rights and duties.

The belief that notions (concepts) can be learnt adequately by simply taking them in has been subjected to several criticism which underscore the fact that comprehension, the fundamental condition of knowledge is not satisfactorily done in this way. Thinking is a constructive activity rather than a simple association of intellectual meaning. Modern psychological theorists (O. Selz, J. Piaget, I. P. Galperin, J. Bruner etc) shown that notions (concepts) are formed based on the internalization of external actions that is based on the transfer from external actions of reception to internal actions that occur on the mental plain with the aid of language. According to Jean Piaget thinking is a game of operations not a simple assimilation and association of ideas. At the hire levels thinking is a system of logical operations of processing, interpretation, translation, realigning and application of information at the abstract level with the purpose gaining new knowledge or solving problems. Its fundamental elements are the schema of mental activity. Therefore knowledge cannot be equated to intuition to the acquisition of figurative copies of reality, but it consists in operations that fix the real in thinking. Trying to explain the way in which new acquisition occurs the modern learning stress the development of connections, structures and operation and their manner of functioning. Learning is not merely thesaurus of data but especially a formative process of rediscovering knowledge. For this very reason instead of a verbalist and classic education, based on the transmission and reception of ready-made knowledge, learning experiences, essentially personal ones, should be promoted. To state that the student is going to learn new concepts is to say, in fact, that he has to do some operations that mediate discursive, rational knowledge.

Thinking is an active process of mental re-construction of the aspects that reality reveals to us. It cannot be confined, however, to processing perceptive images, just as it cannot be regarded simply in the metaphysical sense as an entity that operates with pure meaning independent of external signals. The activity of knowledge is done including with these signals because thinking also has a concrete denotation which often represents its starting point and from which it cannot be detached completely without losing its meaning and its raison d’être.

Notions (concepts) are formed by repeated structuring and re-structuring which use the operation of generalization and abstractization. Miron Ionescu explains the process as follows: "the conception according to which notions are formed by simply summing up perceptions and representations is wrong. Moving from these notions requires abstractization and generalization, with the aid if which the essential characteristic features of objects, phenomena and processes are identified. The forming of notions is not merely the result of selecting features

contained in perceptions and representations but it involves processing of the gathered material and changing it in notions thanks to activities of abstractization and generalization that take place in thinking" (2000, p. 107). So by identifying the common features of a class of objects or facts, by means of generalization we acquire an abstract mental construct. The real is reflected at the level of rational thinking in a mediated form, changed into concept. In stead of the concrete individual we obtain the general as the object of thinking. By definition, the general encompasses all that is common, and identical to a multiplicity. Thinking arises from the individual to the general, from phenomenon to the essence which it condenses in notions and concepts. They reunite the phenomenal diversity in a unit by finding the identity of the essential features that characterize the elements of a class, extracting them and generalizing them for the entire class.

Through synthetic receptiveness, thinking sets multiplicity under the sign of unity. Synthesis is that which gathers the disparate elements and unites them into a whole. Conceptualization, as a third stage, involves the operation of generalization which is a predominantly synthetic operation. To this we add abstractization, an operation by which thinking is placed in the field of essence. Abstract signifies what thinking conceptually includes as being identity in the concrete and sensible given fact. Conceptualization, according to Mielu Zlate (1999), is the capacity to abstractize the distinctive attributes of a class of objects which are then incorporated in an image or a "concept idea". By isolation, extraction and retention of the common features of multiplicity, thinking makes the leap from the concrete individual to the general in the abstract, logical plane.

Conceptual thinking is abstract because it pursues the essential and the general detached from the concrete. Only generalization allows for an abstract understanding of reality because only it can reveal essential determination. Generalization is at the same time abstraction because what is essential is, ipso facto, general. This is the means by which the subject can rise to the rational level of knowledge. Thinking is defined in its own nature only when it moves away from the immediate, concrete reality, which it reduces to an abstract form that can be approach in itself. Comprehension of the abstract is that which constitutes the concepts, in virtue of the triad essence, necessity, universality.

Through concepts thinking highlights the essential extracted from a plurality of individuals in the order of knowledge we grasp the essential by means of the universal which cannot be sensed for intelligible and therefore it can only be thought. In itself, concept is universality versus the particularity of concrete things, unity versus diversity; it is only universal due to the fact that it places in front of the subject the necessary constitutions of an essence.

Given the fact that it provides for the adequate knowledge of reality, concepts lie at the fundament at scientific discourse and, in terms of education, of the didactic discourse. On the clarity of learnt/formed concepts depends the justness of judgments and reasoning, understanding and explanation of reality.

Conceptual thinking allows for more profound knowledge because knowledge grows not only by accumulation of concrete data but first and foremost by abstract integrating structures. Therefore, forming concepts that are specific for the domain of study for students pays an extremely important role in the learning; eventually their entire system of knowledge is built on the basis of assimilated concepts.

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CIVIC MISSION OF THE UNIVERSITY AND THE TEACHING PROCESS

SIMONA-ELENA BERNAT

ABSTRACT. The mission of the university changed during the 20th century under the influence of scientific and cultural progress. Universities have maintained their initial functions: transmission of culture, professional formation and research, but have added new functions to better respond to the requirements of the community that hosts them: innovation in technology, public instance for critical examination and commitment to civil rights, social justice and reforms. There are five ways in which the civic mission of today's university can be accomplished:

1. the student is redefined as a consumer
2. the teaching strategies are student-centered
3. the theoretical fundaments of teaching are predominant constructivist
4. service learning is used
5. the graduate is equipped with civic skills

The term *literacy* has gained a new dimension under these circumstances, the dimension of civic literacy.

The mission statement of a university articulates the goals that the respective higher education institutions pursue. These goals invariably emphasize the instruction of the youth and the promotion of science and culture. Ortega y Gasset (1999) identifies three functions that a university must accomplish:

- transmission of culture
- professional training
- scientific research and the education of the new scientific researchers

Today universities still have all these functions, but readjust them in terms of responding to the requirements of the community where they function. Starting with Rousseau and Pestalozzi, the history of pedagogy pointed out that education means content, and two actors: the professor and the student. However, pedagogy has gained a new orientation: the student-centered approach of teaching. Today, scientific based pedagogy developed the necessary methodology to materialize the ideal of Rousseau and Pestalozzi, and this evolution is closely related to the evolution of the University paradigm: from the Humboldtian University to the Entrepreneurial University, whose most important principle is focus on the client.

Who is the client of the university and how is this client provided for in the mission of the university? The first client of the university has always been, and

will always be, the student. The second client is society, for which the student is prepared. European Universities follow five directions when they set their mission (Marga, 2003):

- formative
- scientific research
- technological innovation
- public instance for critical examination
- commitment to civil rights, social justice and reforms.

The idea of sharing culture (Gasset, 1999) is reconsidered; the university has the role of interpreting knowledge and teaches people how to evaluate the value of that knowledge. The principle of quality assurance that the European University Association adopted is one answer that higher education institutions have identified for solving the problem of coping with information explosion.

As a public instance, the University has to decide what is valuable, under what circumstances, and what are the instruments that can be used to evaluate value. Through the education process, the graduates become autonomous, they will gain their own authority to decide what value is. Authority is meant to be handed down (Albu, 1998) to new generations. To use authority, public instance, is to contribute to the growth of those who are the object of the authority, with the purpose of helping them to gain their freedom. "That who has reached the peak of his utmost freedom, that who has accomplished himself ahead of himself, and beyond himself, has the power to lead others to where they themselves, on their turn, become free" (Liiceanu, 1994, p.105). The university will serve its client, the student, using its authority to teach the student how to live a creative and responsible life.

Today the university has become aware of its civic mission: to promote active citizenship. Active citizenship is the syntagm that evokes people who want to serve their community, who take advantage of their educational opportunities, who are capable of leading their own productive and responsible lives. A university that forms active citizens is a proactive one.

In order to identify the means for reaching proactivism in higher education, two important meetings were organized, with the participation of universities, policy makers, leaders and representatives: the Wingspread conference (December, 1998) and the Salzburg Seminar (February, 2001).

The Wingspread conference was attended by university presidents, provosts, deans, faculty member and representatives of professional associations, private foundations, civic organization, gathered together with the purpose of developing strategies for reviving the civic mission of the research universities. These strategies engage faculty members to develop and use knowledge for the improvement of society, and engage universities to prepare students for responsible citizenship in a diverse democracy. Research should focus on measurable achievements, efficiency and usefull products.

The Salzburg Seminar involved representatives of eighteen European countries and the United States, with the purpose of sharing experiences and pooling ideas about the social and civic mission of the university, with a view to strengthening the interaction between academic and public life. The participants agreed on the promotion of the following principles:

- public service is a central responsibility of modern universities, fully compatible with – indeed reinforcing of – teaching and research;
- university policies that enhance the participation of faculty, staff and students in all spheres of social and civic activities should be strengthened;
- the support and cooperation of social and civic organization should be sought by universities to ensure that university policies address community needs;
- national policies should ensure adequate funding of higher education in order to provide support for practice of the social and civic responsibilities of universities, and to secure the commitment of faculty, staff and students to actively engage in the development of their communities.

How is the teaching process influenced by the civic mission that the university develops? We identify five tendencies:

1. the student is redefined as consumer;
2. the teaching strategies are student centered;
3. the theoretical fundaments of teaching are predominantly constructivist;
4. service learning (Temple, 2001) is used;
5. the graduate is equipped with civic skills.

The student's role is reformulated; a student is perceived as a client. The students are the consumers of the university supply. The specializations in higher education respond to the needs of the community and to the social demand.

A university that is client-centered makes use of and promotes active and interactive teaching strategies. These strategies develop critical thinking, ethical judgment, life skills, lifelong learning abilities, activism and proactivism.

This type of teaching needs a theoretical foundation on constructivism. Constructivism understands the teaching-learning process as a partnership between professor and student. The two actors become co-creators of learning.

The use of service learning as an educational method means to build learning on real life contexts. The students offer their knowledge and receive valuable learning experiences.

A graduate who has civic skills has learnt how to make good decisions and how to be creative, autonomous and responsible. Such people are ready to take on their role in society and to participate actively in the community life.

If some decades ago literacy meant to know how to read and write, the 20th century has enriched the significance of this term with the idea of media literacy. The newest significance that literacy has gained –civic literacy – has appeared as a result of the fact that universities have become aware of their civic and social responsibilities.

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LA RÉALISATION D'ENTRAÎNEMENTS AUDITIFS PAR LA MÉTHODE DE LA "RÉPÉTITION DES TÂCHES SPÉCIFIQUES STIMULUS-RÉSPONSE"

MARIA ANCA

ABSTRACT. The evaluation of the hearing function through the methods of tonal audiometry with headphones and speech audiometry and the realization of hearing trainings through the method of "the practices of specific stimulus-response tasks"

Cette recherche s'est déroulée pendant les années 2000 - 2001 à L'école Professionnelle de Cluj-Napoca. On a proposé comme objectif l'efficacitè des différentes méthodes d'évaluation de la fonction auditive, ainsi que l'évaluation de la réponse à un programme d'entraînement auditif d'un group des sujets ayant des déficiences d'ouïe, prothésés, âgés de 16 - 20 ans.

Objectisfs:

1. L'évaluation des performances auditif-verbales par la méthode de l'audiométrie vocale.
2. L'investigation des modalités de prothésation et de l'efficacité de cette prothésation.
3. La stimulation de la capacité auditive restante, prothésées par l'intermédiaire des entraînements auditifs adaptés à l'âge et aux possibilités réelles pour la commmunication des élèves de L'École Professionnelle, y compris par le langage verbal.

Hypothèses:

1. Le déplacement de l'accent mis par le Programme scolaire pour les Écoles Professionnelles Spéciales sur les disciplines techniques et de spécialité au détriment du tronc des disciplines - Langue, langage, communication - se reflète dans les performances audutives verbales des élèves ayant des déficiences auditives et qui suivent les cours de ces écoles.
2. Le bénéfice dû à la prothésation auditive est relativement réduit car les appareils auditifs retrocochléares de type conventionne n'assurent pas l'amplification auditive correspondante aux pertes d'ouïe de ces élèves.
3. Les effets des entraînements auditifs sont diminués si les sujets aux déficiences d'ouïe ne bénéficient pas d'un tel entraînement jusqu'au niveau de l'école professionnelle à cause de la diminution de la plasticité néuronale. On croit que le moment de la prothésation lui aussi a son influence, car chez ces sujets il intervient tardivement.

Pour réaliser les objectifs proposés on a parcouru les étapes suivantes:

1. La réalisation de l'audiométrie de ton pur dans les casques;
2. La réalisation de l'audiométrie tonale en champ ouvert et l'évaluation de la prothésation;
3. La réalisation de l'audiométrie vocale;
4. L'application de l'entraînement auditif selon la méthode de la "répétition des tâches spécifiques stimulus - réponse";
5. La réevaluation de la fonction auditive par la méthode de l'audiométrie vocale.

1. La composition du groupe

Le groupe experimental qui a été soumis à l'examen par l'audiométrie tonale en casques, audiométrie tonale en champ ouvert et audiométrie vocale a eu 33 sujets, élèves de l'École Professionnelle Spéciale de Cluj-Napoca. Ce groupe a été très hétérogène, correspondant à la situation des classes où ces élèves suivent leurs cours. Les sujets présentent des déficiences d'ouïe de type neurosensoriel ayant des causes congénitales ou acquises; ils proviennent des familles auditives, respectivement des familles sourdes, des milieux familiaux très différents où ils béneficient ou pas de stimulation adéquate.

Dans ce groupe il n'y a aucun don't la perte auditive moyenne soit plus petitè que 50 dB, plus de 50% de ces sujets s'encadrent conformément aux résultats à A.T. casques entre 81 et 100 dB perte moyenne.

2. L'évaluation de la fonction auditive par la méthode de l'audiométrie tonale en champ ouvert.

2.1. Suite à l'évaluation par la méthode de l'audiometrie tonale en champ ouvert dans les deux situations expérimentales: on a calculé sans l'utilisation de l'appareil auditif et avec l'amplification auditive, par la différence entre ces deux évaluations, le gain dû à la prothésation. On a constaté qu'en dépit de l'utilisation de la prothèse auditive 14 de ces sujets ont le seuil auditif minime en champ ouvert à plus de 61 dB, ce qui, à une première évaluation, indique un bénéfice réduit à la suite de la prothésation même si la tâche où on a constaté cette chose a résidé en réponse aux tens purs. Le gain dû à la prothésation est situé entre 11 et 45 dB.

2.2. La situation de la prothésation

Tous les sujets sont prothésés bilatéralement, parfois avec des prothèses différentes aux oreilles. Cinq de ces sujets dont le gain se situe dans les limites 10-20 dB sont prothésés avec des appareils auditifs classiques (retroauriculaires) de type BE 31, donc les appareils qui amplifient le moins possible de la série de type BE. L'un des sujets ayant une perte auditive sévère, où on a enregistré un gain de 41 dB, porte à une oreille un appareil BE 31 et à l'autre oreille BE 51.

Par la confrontation du gain dû à la prothésation avec le type de prothèse on remarque que chez les sujets prothésés avec des appareils auditifs de type BE 51, BE 53, BE 54, la valeur du gain dû à la prothésation est en moyenne de 35 dB. Les appareils auditifs sont AM 99 PP et AM 900 PPL aussi. Pour la réalisation de la prothésation (dans la limite de la dotation qui existe) l'audiologue éducationnel a eu en vue le fait que les prothèse de type BE 54 soient repartisées aux sujets ayant une déficience auditive profonde.

Pour vérifier s'il y a une correspondance entre les résultats à AT casques et les résultats à ATFF dans les deux situations expérimentales on a recouru au calcul du coéfficient de corrélation Pearson.

- Étant donné que r = .023, on peut dire qu'entre les valeurs des pertes auditives moyennes établies à AT casques et ATFF sans prothèse aucune correlation n'est enregistrée, ça veut dire qu'on ne peut pas préciser comment ces sujets sont-ils capables de répondre à la stimulation auditive en champ ouvert en partant des données de l'audiométrie tonale en casques, même si la nature des stimuli utilisés est identique.
- Parce que r = .113, on ne s'enregistre aucune correlation entre les valeurs des pertes auditives moyennes établies à AT casques et ATFF, ce qui infirme l'hypothèse selon laquelle les réponses à la stimulation auditive dans les conditions de la prothésation auditive seraient corrélées à la situation de départ dans la prothésation, respectivement avec les données d'AT casques.

Dans ces conditions on a posé la question de vérifier s'il y a vraiment un gain significatif, sur l'ensemble du groupe, dû à la prothésation. À la suite du calcul de la signification des différences entre les deux moyennes enregistrées par les sujets du groupe investigué dans les deux situations expérimentales, (t=4,021), on peut affirmer que la différence dû à la prothésation est fort significative (p<.01).

- Si on considère qu'avec l'âge et donc avec un entraînement plus long dans l'utilisation des prothèses auditives apparaît une tendance d'augmentation du gain du à la prothésation, ni ce fait ne se vérifie pas chez les sujets de ce groupe (r=.127) ce qui soutient notre hypothèse qu'une prothésation tardive implique seulement des bénefices réduits de la prothésation.

Suite à l'étude de la nature des prothése auditives et des paramètres acoustiques de celles - ci on a établi, au niveau du groupe investigué, trois niveaux d'amplification.

Du calcul du coéfficient de corélation Pearson en résulte que:

- Il n'y a pas de corrélation significative entre les degrés du déficit auditif calculés à l'oreille droite et respectivement à l'oreille gauche chez les sujets du groupe investigué et les niveaux d'amplification assurés par les prothèses auditives utilisées par ces sujets.
- La corrélation entre la perte moyenne auditive établie par AT casques et les niveaux d'amflification des prothèses auditives est insignifiante.
- Il n'y a pas de corrélation significative entre les résultats à ATFF, à aucune de ces deux situations expérimentales et les niveaux d'amplification assurés par les appareils à toutes les deux oreilles.

- La seule valeur significative du coéfficient de corrélation Pearson (r=.668, p<.01) s'enregistre entre le gain dû à la prothésation et le niveau de l'amplification assuré par les prothèses auditives à l'oreille gauche des sujets.

4. L'évoluation de la fonction auditive par l'audiométrie vocale.

Le materiel verbal utilisé a résidé en listes de mots bisyllabiques, équilibrés du point de vue phonétique.

Au début du test on a constaté que beaucoup de sujets ne répétaient pas les mots non parçe qu'ils ne les entendaient pas mais parce qu'ils ne les connaissaient pas ou ne les comprenaient pas. Par conséquence on a procédé à une nouvelle sélection des items verbaux en tenant compte du vocabulaire des sujets. L'évaluation s'était bien déroulée conformément à la procédure de l'audiométrie vocale, le matérial verbal étant présénté directement par l'examinateur, étant réglé seulement le niveau de la sortie du son du haut-parleur et mesuré avec le sonomètre.

Une autre constatation est liée aux certains sujets qui n'ont pas réussi à répéter 50% des mots entendus au niveau maximum d'intensité, d'où on résulte que le matériel verbal est trop complexe pour eux, pour qu'il soit reproduit et leurs habilités de prononciation sont trop faibles. Par conséquence on a proposé d'établir les paramètres specifiques de l'audiometrie vocale à l'aide des listes de phonèmes.

En fonction de la réussite de la perception sur la voie auditive et de la reproduction verbale, les 33 sujets se distinguent par la capacité de répondre à un matériel verbal ayant une complexité différente: des mots et des phonèmes. Les moyennes des valeurs des seuils minimum établies par AT. casques et respectivement par ATFF chez les sujets qui ont réussi la tâche d'identification des mots sont d'une manière significative plus grandes (p<.01) que celles des sujets qui ont réussi l'identification des phonèmes.

Il est évident que l'une des causes du manque des réponses à la simulation par les mots est le degrès de déficience auditive, respectivement la gravité du déficit auditif.

On considère qu'une autre variable qui détermine ces différences est l'habilité des sujets de détecter, en champ libre, le matériel verbale avec signification, donc la capacité des sujets d'écouter la parole, mais de parler aussi.

La plupart des sujets du sousgroupe de ceux qui ont répondu au matériel verbal - mots - ont fréquenté une école pour les défficients d'ouïe et certains ont suivi l'école maternelle spéciale pour les défficients d'ouïe. Autrement dit l'intervention précoce dans le domanine de la stimulation de l'ouïe et de langage verbale reflète à l'âge de la puberté et de l'adolescence dans un niveau meilleur de la réussite de l'audiométrie vocale, manière d'évaluation inédite pour ces sujets.

Les sujets qui ont répondu aux stimuli-mots présentent les valeurs moyenes suivantes des paramètres établis par AV: le seuil d'intelligibilité 79,52 dB, le pourcentage d'intelligibilite 72,62% le déficit de discrimination 27,38 dB et le déficit de voix 64,52 dB, des valeur meilleures que celles obtenues par les sujets du sousgroupe de ceux qui ont répondu aux stimuli phonémes (figure 1).

a)

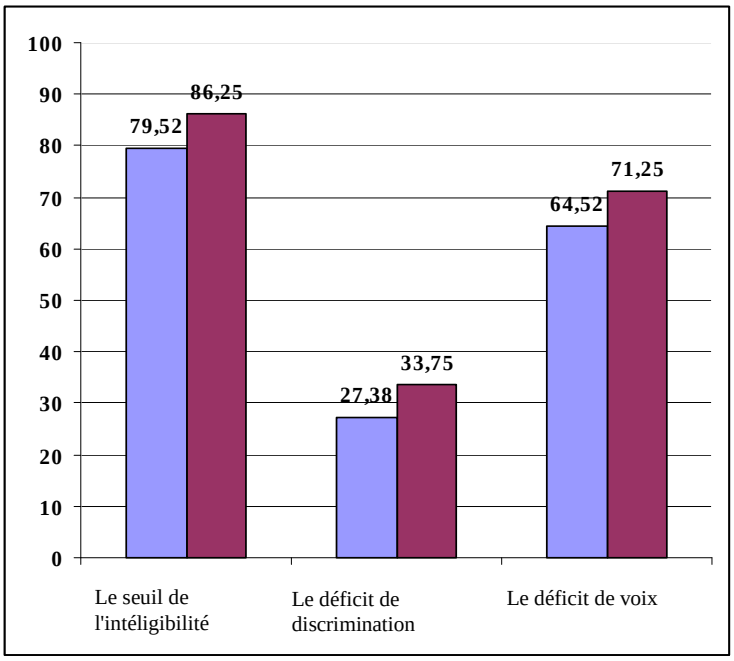
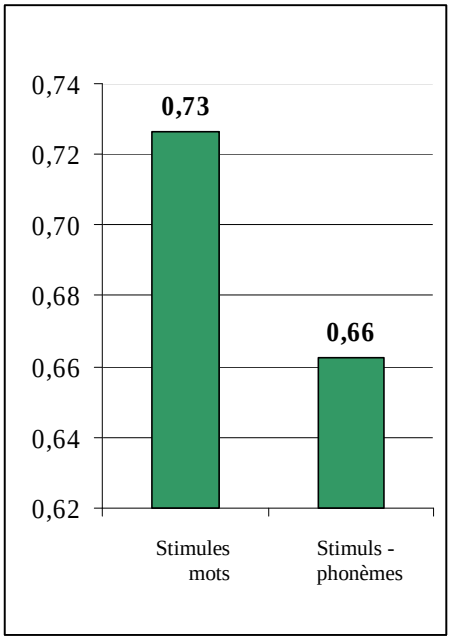


Fig. 1 (a, b). La distribution des paramètres de l'audiométrie vocale, en fonction de la capacité de répondre aux stimuli - mots et respectivement aux stimuli - phonèmes

b)



Chez tous les 33 sujets on a enregistré sur les audiogrammes vocales la présence du seuil de distorsion.

Par le calcul du coéfficient de corrélation Pearson on a constaté qu'il n'y avait de corrélation significative ni entre les résultats à l'audiométrie vocale et AT casques et ni entre AV et ATFF dans les deux situations expérimentales. Ces constatations montrent le fait que les examens par l'audiométrie tonales ne sont pas suffisants pour pouvoir faire des prédictions sur la réussite dans la réception et la reproduction des matériaux verbaux et ni sur les communications verbales.

L'entraînement auditif selon le modèle de la "Répétition des tâches spécificques de type stimulus-réponse".

Les exercices englobés dans le programme de l'entraînement ont visé tant les contenus habilités auditives que les habilités verbales. Ils s'étaient déroulés en cours de 6 mois dans des séances d'une heure par semaine.

À l'occasion des examens réalisés par l'audiometrie on a observé (remarqué) que les sujets, même s'ils détectent les mots stimuli présentés ne réussissent pas à les reproduire, les difficultés étant constatées tant dans le domaine de l'audition (difficultés de dicrimination et de compréhension), que dans le domaine de l'expression verbale (difficultés de prononciation), étant extrêmement dépendants de la lecture labiale et surtout du langage gestuel. Étant donné que ces sujets n'ont pas bénéficié antérieurement d'entraînements auditifs spécialisés on a opté pour la construction d'exercices selon le modèle de l'entraînement des tâches spécifiques stimuli-réponse, étant entraînés dans la résolution des tâches: l'audition des éléments de compréhension et d'expression du lagage oral et écrit aussi. La justification du choix de ce modèle d'entraînement a été donnée par l'expérience positive obtenue avec le groupe de sujets de l'École pour les déficiences d'ouïe nr. 1. Ces exercices ont été appliqués en groupe, ils ont été de type jeux-ancours, en suivant parallèlement des objectifs motivationnel-affectifs. Lorsqu'il y avait des difficultés chez certains sujets, on est intervenu d'une maniere individuelle avec des tâches de remède.

Une autre remarque qui s'impose est celle que dans le cadre de chaque entraînement auditif, y compris le nôtre, on n'a pas appliqué seulement une méthode unique d'entraînement. Les tâches des entraînements auditifs peuvent être groupées conformément aux niveaux d'audition explorés par la preuve GASP, mais par autres preuves aussi tâches de détection, discrimination, identification et compréhension verbale et le matériel verbal avec lequel on opère diffère, parmi les autres, par le niveau de complexité (phonème, syllabe, mot, phrase, discours).

Ces tâches, on les différencie nettement seulement du point de vue méthodologique car en réalité elles se superposent partiellement. Ainsi, tout exercice qui a comme objectif fondamental l'identification, suppose la réalisation des tâches de détection aussi (phonémes, structures phonologiques), mais aussi des tâches d'identification. Les exercices déroulés pendant l'entraînement (tableu 1) ont commencé par l'utilisation des unités ou des structures phonologiques connues par les sujets, mais pendant l'instruction on a fait appel aux autres structures phonologiques aussi).

Tableau 1

Les exercices appliqués pendant l'entraînement auditif

Tâche / Unité phonologique	Detection	Discrimination	Identification	Compréhension
Phonème	3, 4		2, 8	
	1			
		5		
Sillabe		9		
Mot		11	12, 13, 14, 17	
		7		
Phrase		15, 16	20, 21	
		6		
Discours				
		18, 19		

On décrit brièvement le contenu des exercices:

1. La détection sur la voie auditive des phonèmes (les sujets devaient lever les mains s'ils entendaient)

2. L'identification des phonèmes (les sujets devaient répéter ce qu'ils entendaient)

3. La détection et la discrimination du nombre des phonèmes (les sujets devaient indiquer combien de phonèmes présentés ont ils entendu).

4. La détection et la discrimination des phonémes (les sujets ont montré combien de phonèmes étaient identiqués).

5. Discrimination, compréhension (les sujets devaient indiquer si un son dit par le psychopégadogue est entendu dans le mot dit aussi par celui-ci; par exemple: "c" en "parcage"; "r" en "bruit").

Ce phonème à identifiér a été mis dans différentes positions dans le cadre du mot, il y avait des phonèmes ressemblants du point de vue acoustique avec le phonème du mot, d'autres ont été différents du point de vue accoustique de ces phonèmes.

6. Discrimination, identification, compréhension (les sujets devaient indiques la répétition d'un certain phonème dans une phrase). L'augmentation des difficultés est donnée par l'introduction de plusieurs élements sursegmentaux et par le fait que le même phonème se trouve dans des combinaisons phonémiques différentes, le phénomène de la coarticulation compliquant de plus la tâche auditive. Par exemple, combien de fois est-ce qu'on attend le son "j" dans la phrase "J'ai joué dans le jardin".

7. Identification et compréhension (les sujets devaient écrire la lettre correspondante au phonème entendu avec un crayon d'une certaine couleur). Par exemple, il devaient suivre des consignes telles que: "Écrivez "f" avec le rouge"; Dessinez un arbre avec le marron" etc.

8. Identification et compréhension (les sujets devaient noter toutes les fois qu'ils entendaient deux sons dans une série de mots). Les sons qu'ils devaient identifier sont les sons des paires des phonèmes sourd-sonore. Par exemple: "Notez toutes les fois que vous entendez les sons "f", "v" dans les mots: détectif, autographes, alphabet, bavard, vin, fille, café, avion, vache".

9. Identification et compréhension (la tâche était de noter toutes les fois qu'ils entendaient une certaine syllabe dans une série de mots),

10. La discrimination et l'identification des syllabes (la tâche a été de biffer sur la liste la syllabe prononcée par le psychopédagogue). On a donné des listes, aux sujets, avec des syllabes construites en fonction de certaines critères:

- Syllabes contenant la même consonne, syllabes directes, inverses et avec la consonne cible en position intervocalique (exemple: ag, ga, aga);
- Syllabes contenant une des consonnes des paires sourds-sonore, étant aussi, directes, inverses et avec consonne en position intervocalique (exemple: ef, fe, efe, ev, ve, eve);
- Identification d'un logatom dans une série des logatoms

11. La discrimination. Les sujets devaient dire si les syllabes entendues sont les mêmes et ils devaient dire leur nombre.

12. La discrimination et l'identification des mots. Les sujets ont reçu des listes avec des phrases de type lacunaire, où ils avaiént la possibilité xde choisir l'un des trois mots écrits à côté des phrases, ayant la tâche de souligner le mot prononcé par le psychopédagogue.

Exemple: Alina a … cinq ans
… cinquant ans

13. La discrimination et l'identification des mots. C'est un exercise similaire au précédent, ayant un degrès plus grand de difficulté, car aux quelques sujets manquait le contexte propositionnél, eux, ils devaient souligner le mot d'une série de trois mots. On a donné des séries de mots monosyllabiques et bisyllabiques.

14. Détection, discrimination, identification. L'exercise sous la forme d'un jeu-concours. Les sujets ont dû biffer sur leurs feuilles, différents dans certaines limites selon le sujet, contenant 15 mots, les mots prononcés par le psychopédagogue. Les mots selectiennés ont eu des patterns syllabiques et des accents différents. Les premiers qui ont compléter les feuilles ont été récompensés.

15. La discrimination et l'identification des mots. C'est un exercice similaire au nr. 13., mais le matériel verbal utilisé contient des paronymes ce qui implique une discrimination auditive plus fine.

16. L'identification et la compréhension des mots. Les mots qui devaient être identifiés par les sujets ont été notés dans une matrice similaire à celles des "mots croisés", en mettant aussi le problème de la discrimination visuelle des structures verbales parmi d'autres graphèmes (discrimination figure-fond). L'organisation et la selection des mots stimulus ont été faites en fonction de leur composition phonétique, pour que chaque matrice nécessite des discriminations entre les mots contenant des phonèmes très semblables du point de vue acoustique.

17. Détection, discrimination, identification, compréhension. Différents exercices sur le même texte lu: l'identification des affirmations vraies ou fausses en ce qui concerne le texte: le completement des phrases lacunaires; la résolution des "mots-croisés", le choix de la variante correcte parmi plusieurs possibles (sous forme de phrases); etc.

18. Compréhension. Les sujets devaient répondre en crit aux questions, puis lire les réponses à haute-voix.

19. Compréhension. La confection des figurines ou jouets, de matériaux trouvés à la portée, conformément aux instruction verbales du psychopédagogue.

Pendant cet entraînement on a identifié chez chaque sujet une multitude de difficultés don't quelques- unes specifiques au sujet en question. On a intervenu d'une manière individualisée, dans des séances de 10-15 minutes, pour le remède des difficultés.

Pendant ces séances on a mis l'accent sur la prononciation des sujets qui a été déficitaire, tandis que le vocabulaire a été pauvre.

5. L'évaluation des effets de l'entraînement auditif par la méthode de l'audiométrie vocale.

5.1. La caractérisation de la fonction auditive chez les 8 sujets selon les résultats des examens auditifs réalisés (tableau 2).

Si on regarde le tableau 2 on peut remarquer:

- Le seuil d'intelligibilité a augmenté chez tous les sujets: avec 5 dB chez 5 sur 8 sujets, respectiviement avec 10 dB chez 3 des sujets;
- Le défficit vocal s'est réduit chez chaque sujet, par conséquent le plus grand défficit vocal a été de 65 dB chez deux des sujets.
- Le pourcentage d'intelligibilité a augmenté approximativement 5-10dB, ainsi qu'il a atteint 95% chez deux des sujets.
- Aucun sujet de ce groupe n'a réussi à attendre le pourcentage d'intelligibilité idéal, ce qui fait que le défficit de discrimination, même réduit, reste entre les limites de 5-35 dB.

Tableau 2

La caractérisation de la fonction auditive chez les 8 sujets selon les résultats des études auditives réalisées

Le sujet	AT casques (perte moyenne dB)		ATFF (perte moyenne dB)		AV – seuile d'intelligibilité		AV – défficit vocal		AV – pourcentage d'intelligibilité		AV – défficit de discrimination	
	UD	US	Sans prot.	Avec prot.	Avant AAVI	Après AAVI	Avant AAVI	Après AAVI	Avant AAVI	Après AAVI	Avant AAVI	Après AAVI
CF	56	54	79	68	80	75	65	60	70	80	30	20
HE	46	73	79	63	85	80	70	65	60	70	40	30
MN	85	85	85	51	85	80	70	65	60	65	10	5
CR	62	72	62	44	65	55	50	40	90	95	10	5
RM	60	63	67	39	60	55	45	40	90	95	10	5
BC	62	60	69	53	70	65	55	50	80	85	20	15
SR	79	80	88	56	80	70	65	55	80	85	20	15
ÞA	84	88	91	49	80	70	65	55	80	85	20	15

- On constate quelques évolutions inattendues. Ainsi, deux des sujets qui obtiennent les plus hautes valeurs au seuil d'intelligibilité (85 et 80) et qu'ensuite ont des résultats plus faibles aux autres paramètres des AV, ont des résultats assez différents à AT Casques, avant et après l'entraînement auditif

- HE a 46 dB à OD et 73 dB à OG

- MN a 85 dB à OD et 85 dB à OG.

Si on regarde les résultats à ATFF les inadvertances continuent:

- HE atteint 79 dB sans prothèse, donc un résultat beaucoup plus faible que celui en casques, le gain dû à la prothésation est de 16 dB

- MN a des résultats congruents à AT casques et à ATFF, et le gain dû à la prothésation est plus consistent: 34 dB.

Une explication possible de ces inadvertances c'est la grande différence entre les seuils à AT casques aux oreilles, situation qui reclame l'application de l'audiométrie par la "technique cachée", examen qui n'a pas été possible à cause des limites de l'audiométrie utilisée.

Un autre élément inducteur des différences constatées est la prothésation, respectivement le gain dû à la prothésation qui est beaucoup plus différent dans les deux situations. Malhereusement aucun de ces deux sujets ne réussit à profiter de l'entraînement auditif-verbal individualisé.

5.2. Les relations entre les résultats des examens par AT, ATFF, AV et la prothésation.

Tableau 3

Corrélation Spearman	***Perte Moyenne AT***	***Niveau d'amplification***	
		OD	***OG***
Le degrès de la perte auditive	P < .01	-	-
Seuil d'intélligibilité	-	P < .05	-
Seuil d'intelligibilité	-	-	-
Défficit vocal	-	P < .05	-
Défficit vocal	-	-	-
Pourcent d'intelligibilité	-	-	-
Pourcent d'intelligibilité	-	-	-
Gain dû à la prothésation	-	P < .05	P < .05
ATFF sans prothèse	-	-	-
ATFF avec prothèse	-	-	-
CO/1000-4000 Hz	-	-	-

Il y a donc peu de valeur où la corrélation est significative. Il est à remarqué l'existence d'une corrélation entre le seuil d'intelligibilité et le défficit vocal et respectivement, le niveau de l'amplification avant la réalisation des entraînements auditifs, corrélation qui ne se maintient pas après les entraînements. Cela peut être expliqué par le fait que la modification des performances à AV ne dépend pas seulement de la perception des stimuli sur la voie auditive mais aussi de la manière de prononciation des sujets, respectivement de l'intelligibilité de la prononciation de ces sujets qui agitent comme une boucle qui ferme le circuit auditif-verbal mais qui a une fonction de redoublement et de précision de la perception auditivè pour la matériel verbal.

Une autre relation significative est celle établie entre le niveau d'amplification et le gain dû à la prothésation.

On a proposé de suivre si la différence entre les paramètres établis par l'audiométrie vocale, avant et après l'entraînement auditif, est significatif.

Tableau 4

Lés résultats à AV. Avant et après l'entraînement auditif

	a	***b***	***c***	***d***	***a****	***b****	***c****	***d****	***Dif. a***	***Dif. b***	***Dif. c***	***Dif. d***
CF	80	65	70	30	75	60	80	20	***-5***	***-5***	***10***	***-10***
HE	85	70	60	40	80	65	70	30	***-5***	***-5***	***10***	***-10***
MN	85	70	60	40	80	65	65	35	***-5***	***-5***	***5***	***-5***
RM	60	45	90	10	55	40	95	5	***-5***	***-5***	***5***	***-5***
BC	70	55	80	20	65	50	85	15	***-5***	***-5***	***5***	***-5***
SR	80	65	80	20	70	55	85	15	***-10***	***-10***	***5***	***-5***
TA	80	65	80	20	70	55	85	15	***-10***	***-10***	***5***	***-5***
CR	65	50	90	10	55	40	95	5	***-10***	***-10***	***5***	***-5***

Par le calcul des valeurs du test t on a constaté que les différences entre les seuils d'intelligibilité (a), le défficit vocal (b), le pourcent d'intelligibilité (c) et le défficit de discrimination (d) sont fort significatifs, à un seuil $p < .01$.

Il est vrai que la différence entre les paramètres établis par AV indique le fait que les entraînements auditif-verbaux basés sur la méthode "l'Entraînement des tâches spécifiques stimulus-reponsé" ont été efficients mais, d'une manière surprenante ils ne se sont pas répercutés sur d'autres paramètres qui reflètent l'efficacité de la fonction auditive.

6. Réflexions à la fin de la recherche

En faisant l'évaluation de l'indice utilisé pour le compte rendu des résultats par la méthode de l'audiométrie auditive: *l'intelligibilité de la prononciation,* on considère qu'il y a une série de paramètres qui influencent les performances des sujets. Un tel paramètre est la nature du matériel utilisé pour l'évaluation sous l'angle de la structure phonologique mais aussi sous l'angle de la compléxité syntaxique et sémantique. Des études sur l'influence de ces paramètres ont été réalisées par Cium¾geanu qui a constaté que dans le passage de la prononciation isolée des sons à la prononciation liée du cadre des logatoms, la parole des sourds perd de son intelligibilité. Cet aspect a été surpris pendant cet expériment aussi lors de l'audiométrie vocale quand, certain élèves examinés par cette méthode ont échoué au moment où ils devaient reconnaître le matériel verbal constitué de mots monosyllabiques, leur évaluation étant possible seulment avec des phonèmes.

Il est évident qu'une explication de ce phénomène est celle liée à la complexité du matérièl verbal pendant que d'autres explications se lient à la capacité auditive des sujets. On met le problème des différences constatées du point de vue des performances à AV entre les sujets de l'École Professionnelle et respectivement les sujets de l'École pour les déficients d'ouie nr. 1. Ces derniers ont réussi à répondre à AV et à un matériel verbal plus complexe, respectivement des mots, même si les résultats à AT indiquaient parmi eux aussi l'existence de certains déficits auditifs sévères. Donc la gravité de la perte auditive ne peut pas être l'unique explication pour ces différences.

Suite aux interventions dites dans ce chapitre on peut conclusionner que les résultats des examens à AT et à ATFF devraient s'améliorer si les sujets bénéficiaient d'entraînements auditif-verbaux à condition que ceux-ci se déroulent d'une manière systématique ayant une période de temps suffisante, tel qu'on a déjà démontré dans les chapitres antieurs.

Une explication possible en ce qui concerne les différences constatées aux examens réalisés entre les résultats des éleves des classes normales (I-VIII) et les résultats des élèves de l'école professionnelle pourrait être liée aux plans d'enseignement et aux programmes proposés à ces élèves.

Les recherches ont démontré que les entraînements auditifs et verbaux prouvent leur efficacité sur le langage et sur la communication verbale à condition que la fréquence, l'intensité et les conditions de déroulement soient adéquats aux paramètres spécifiques à la déficience auditive, autrement dit, il est important que ces entraînements soient spécifiques et il serait idéal qu'ils soient individualisés.

Dans le curriculum pour l'école primaire (I-IV) destiné aux écoles spéciales pour les élèves ayant des défficiences d'ouïe il y a plusieurs modules où on vise le développement du langage et de la communication et où on a prévu un nombre substancial des classes par semaine.

Un tel module est le module "A", "La formation humaniste et sociale" qui pour la classe de roumain (6-10 heures) a prévu plusieurs activités (lecture – écrit: 8 heures; langage et communication: 2-4 heures; lecture – écriture – ortographe: 3-6 heures; lectures littéraires et grammaire). Un autre module spécifique aux interventions chez les élèves déficients d'ouïe réside en "Activités spécificques thérapeutiques, récupérateurs et compensatoires" et elles includent les disciplines labiolecture et la tehnique de la parole, ayant chacune une heure par semaine. Le programme lui-même recommande le travail par petits groupes ou individuel or, dans ce cas le nombre des classes est categoriquement insuffisant, tout comme les heures prévues pour l'audiologie édicationnelle.

Le curriculum pour les collégiens (V-VIII) a prévu dans le cadre du module "La formation humaniste et sociale" pour la classe de roumain les mêmes disciplines que pour les classes primaires (I-IV), le nombre des heures est de 7-11. Le module "Activités spécifiques thérapeutiques-compensatoires et récupérateurs" include les mêmes disciplines qui sont prévues seulement jusqu'au V^{e} classe.

Le élèves de l'école professionnelle se préparent pour différents métiers, ils travaillent dans des classes et dans différents ateliers. Les programmes scolaires comprennent des disciplines de culture générale, des disciplines de culture technique de spécialité et du classe d'instruction pratique.

La formation professionnelle de ces élèves est similaire à celle des élèves qui suivent les cours de l'école professionelle normale. Dans le cadre du module de "culture générale" l'une des disciplines est la langue roumaine, pour laquelle on a prévu deux heures par semaine. On remarque qu'il n'y a plus de disciplines de la catégorie correctif-compensatoires.

Nous croyons que la simple utilisation d'une prothèse auditive adéquate mais durant une période suffisante et la participation aux activités instructifs – éducatives et correctif-compénsatoires pareilles à celles prèvues par le programme scoalire pour les classes primares (I-IV) et pour les collégiens (V-VIII) contribuent à la modification mesurable dans les réponses à la stimulation auditive. On essaie de démontrer ce fait dans le chapitre suivant.

Les réponses des sujets à la stimulation auditive seront plus faibles si la prothésation a été tardive ou si les sujets ne bénéficient pas de stimulation auditive-verbale parce que ces sujets ne sauront pas valoriser leurs restes auditives. Dans le cadre du groupe investigué dans ce chapitre, les résultats à AT et ATFF peuvent être marqués par un autre phénomène aussi: les pertes évolutives d'ouïe.

Ni selon les évaluations ni selon les constatations faites pendant les entraînements auditifs les sujets ne peuvent valoriser l'apport de la signification des mots et des patterns syllabiques. La fonction auditive-verbale a perdu sa plasticité et les transfers informationnels d'un champ à l'autre ne sont plus possibles. On constate aussi que le temps de latence est plus grand chez les sujets de ce groupe que chez les sujets des recherches antérieures, ce fait étant observé a l'occasion des

examens où on a constaté la tendance de répondre aux stimuli auditifs (sans tenir compte de la nature verbale ou non-verbale de ceux-ci et de leur degré de complexité) seulement au moment où la stimulation a cessé ou au moment même de la présentation du nouveau stimulus.

Une explication psychologique de ces manifestations pourrait être la difficulté d'integration des informations de divers champs corticeux impliqués dans le déroulement de la fonction auditive-verbale, respectivement des informations sensoriales, des informations verbales (signification, compréhension, expression) et des aspects motivationnels - affectifs.

Les informations sensoriales transmises sur les voies sensoriales se rencontrent dans le métacircuit polisensorial, situées dans la zone du langage idéationnel. Ce trajet néurologique a les fonctions suivantes:

- il contient toutes les informations comuniquées par les sens au cerveau, en ce qui concerne l'objet manipulé par l'enfant;
- il est la banque de donnée qui se réfère à cet objet; il contient toutes les informations visuelles, tactiles, gustativès, olfactives et kinésthésiques concernant l'objet,
- il est un récipient qui contient la définition personnelle, extrait par l'enfant de sa propre expérience sur l'objet en question; il connaît d'un certain objet ce qu'il a vécu,
- il y a a des informations sur toutes les personnes avec lesquelles l'enfant a été en contact et sur toutes les situations vécues.

Une modification des macromolécules d'ARN des celulles nerveuses du métacircuit fixe le trajet ainsi crée et constitue, donç la mémoire. De nouvelles présentation de l'objet, de la personne, ou de la situation accélère ces processus chimiques - d'où résulte le rôle de la répétition dans la mémorisation.

Pendant que l'enfant manipule un objet, l'entourage lui en parle en le précisant pour qu'une "forme" ou une "image" auditive soit associée à un objet spécifique.

Chez les enfants aux déficiences d'ouïe apparaît le phénomène du "triangle de référencé, eux, ils ne pouvant pas écouter et regarder en même temps l'objet, mais ils devaient commuter le regard de la personne qui donne des explications à l'objet dont on parle.

Chez ceux qui entendent, l'image sonore sera inscrite dans une engrame perceptif-auditive, dans la partie antérieure de la zone du langage ideationnel. Autrement dit, les caractéristiques sonores, vibratoires de ces mots s'inscrivent dans un nouveau trajet neurologique.

Dans le cas des enfants aux défficiences d'ouïe et chez ceux qui ne sont pas prothésés de la période preverbale, des imagines visuelles vont se constituer (labio - facio - visuelles qui seront engramés) mais on va inscrire des caractéristiques spécifiques à la labiolecture (l'image de la prononciation du mot).

Chez ceux qui entendent on établit une voie d'association entre: le métacircuit polysensoriel, contenant les significations de l'objet et l'engrame perceptif - auditive, qui contient la forme sonore du mot correspondant à l'objet en question. Ce fait permet la compréhension parce que chaque fois que l'enfant reconnaît le mot il va retrouver la signification propre de l'objet (figure 2).

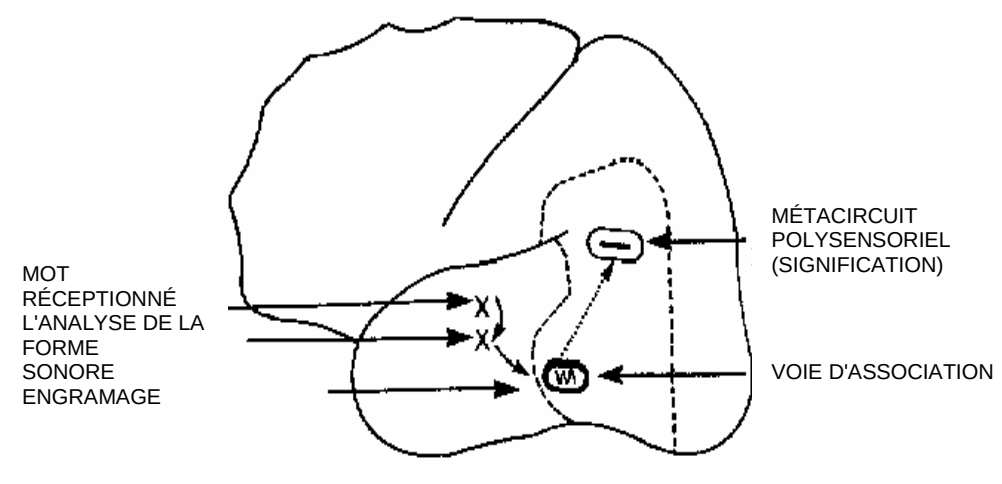


Fig. 2. Le schéma de la compréhension verbale (selon Roulin, 1981)

Si on part de la forme du mot réceptionné et engramé, sur le plan frontal du cerveau (plan moteur) s'inscriveront les schémas d'action articulatorie qui vont permettre la prononciation du mot (fig. 3).

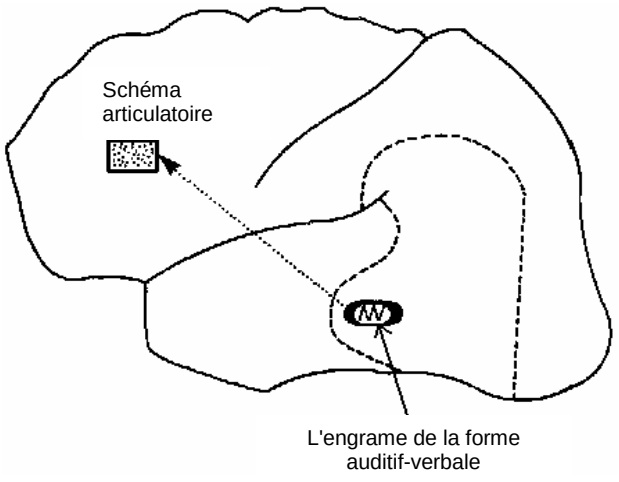


Fig. 3. Les schéma d'action articulatorie (selon Roulin, 1981)

Sur le plan linguistique, l'enfant extrait de ses propres expériences des significations tandis que l'engramage des significations sera différent du point de vue qualitatif et quantitatif chez chaque enfant. Les significations engramée dépendent du point de vue quantitatif du dinamisme du milieu social et celui-ci est réduit dans certains milieux, comme par exemple les pensions scolaires. Un tel milieu ne favorise pas l'exploration, la découverte ou l'entraînement du langage oral. Du point de vue qualitatif, les significations dépendent de la nature des émotions subies par l'enfant, ce qui contribue à l'engramage d'une teinte affective positive, neutre ou négative. Dans la plupart des cas, chez les enfants et les jeunes ayant des déficiences d'ouïe beaucoup d'émotions vécues par aux-ci en ce qui concerne l'engramage des mots et des expressions verbales ont des teintes négatives dûes aux situations d'enseignement stéréotype, aux exercices monotones et fatigants, ainsi qu'au sentiment d'échec.

Puisqu'au niveau de l'école professionnelle, le programme scolaire ne prévoit plus des activités spécificques pour l'entraînement du langage verbal, on remarque une détériorisation progressive de celui-ci. Plus que dans l'cole primaire ou au collège, dans les écoles professionnelles on exerce beaucoup plus moins la parole, en faisant appel de plus en plus au langage gestuel.

Une autre explication peut être liée aux implication de l'utilisation intensive du langage gestuel comme code principal dans la communication.

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THE ADULT'S IMAGE AND ATTITUDE TOWARD DEATH

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ABSTRACT. This article concerns issues of adult's image, attitude and response to death. There is presented the multidimensional nature of death anxiety (conscious and unconscious fear of death; trait and state fear of death; fear of own death or others). There are analyzed factors which could influence death anxiety in persons (vital danger and NDL phenomena; death of a close person; personality traits; religiousness; demographic variables; professional status; illness). The article presents different coping stiles regarded death. The contradictory data of researches are discussed in the light of a comprehensive model of death anxiety and the postmodern view on meaning making, constructivism and narratives.

Introduction

"Man is naturally blamed to die through all his existence" (Jung, 1997, p. 210). Death can be regarded as the absolute tragedy, as a mystery scandal, as the "extraordinary order" (Jankélévitch, 2000, p. 7).

Man's attitude toward death went through considerable changes in time because it is and it has always been influenced by norms and traditions of any given culture (Fodor-Szlovencsák, 2000).

Berta (Fodor-Szlovencsák, 2000) synthesized the essential features of death's image as it was in the Middle Age:

1. The stages of physical decaying were not hidden from people. Animals' dead bodies, corpses of victims of wars, epidemics and executions were in people's view all the time. And all these were part of socialization process related to death.

2. Medical knowledge was accumulating slowly, body was less the topic of biological research, and more seen as a tool in the service of the soul.

3. The agony of the dying was considered a temporary station between two worlds. That agony was always invested with a meaning: it was either a lesson for those still living, the result of divine punishment or the end of a life worthy of salvation.

4. In people's conscience at that time world was composed of societies of living people together with those of dead. There was a permanent contact between them; there was a mutual influence between the dead and the living and a constant effort against the returning of the dead among the living.

5. Graveyards were not situated out of settlements, but an organic part of them. Because of spatial limitations unburyings were frequent. Bones and other human remainders were a common view.

6. The proper way of dying was "taught" explicitly through preaches and implicitly through mysteries, so that everybody could develop those near death behavioural patterns which were considered to be appropriate.

7. The funeral rituals gave tasks not only to close family members but also to the community.

8. Due to the high rate of both adult and particularly child mortality, mourning labour was short and because of the instability of family structure people had a greater flexibility.

In the XXth century man's relation to death changed in that " the natural unity between life and death dissolved, death became meaningless and void of content, therefore terrifying" (Békés, 2000, p. 5).

This change was determined especially by:

1. The two World Wars which deprived death of its uniqueness and private nature.

2. The increasing number of sudden, violent deaths, either as a result of accidents or cardiac diseases, which contributed to a sense of impossibility of preparing for the moment of death.

3. The weakening of death rituals due to fragmentation of traditional societies.

All these resulted in intensification of death related fears and anxieties and finally to repression and denial of death to a higher degree than ever before.

This phenomenon was pointed out in the sixties and since then awareness and concern for understanding the image, attitudes and reactions to death increased.

1. The multidimensional nature of attitudes toward death.

For assessment of death anxieties several types of tools were used.

At the beginning mainly questionnaires were used, and sometimes interviews as well. Experts were not aware of the multidimensional nature of death anxiety, which now is widely recognized as such.

1. 1. Conscious and unconscious components of death anxiety.

Death anxiety has both conscious and unconscious components.

Questionnaires are useful for evaluation of conscious fears. Through factor analysis the following components were identified:

a). fear of death as a process and fear of death as a state (what comes after death). This distinction was offered by Templer in 1970 (Kulcsár, 1998);

b). fear of one's own death and fear of death of close ones. These were mentioned in 1969 by Collett and Lester (Békés, 2000);

c). acceptance of death as a way to escape life's sufferings; neutral acceptance of death (with lack of feelings) as a natural part of life, of reality; and hopeful acceptance of death as a way towards a happy afterlife, mentioned in 1988 by Gessel et al. (Kulcsár,1998).

Unconscious death anxiety was evaluated mainly through:

a). Word association, skin galvanic reaction and reaction time in 1975 by Alexander et al. (Békés, 2000);

b). Projective tests (sentence completion) used by de Martin and Wrightsman in 1965 (Békés, 2000);

c). TAT and DAPT (Death Anxiety Projective Test). DAPT is an adaptation of TAT and was made by Rhudick and Dibner in 1961 (Békés, 2000);

d). Death's Metaphors Test elaborated by Ross and Polio (Kulcsár, 1998);

e). Dream interpreting suggested by Handal and Richlak in 1971 (Békés, 2000);

f). Anatomical answers to Rorschach Test interpreted by Cassel in 1979 (Békés, 2000);

g). Recording of mood modification and feelings following death image exposure. This method was used by Paris and Goodstein in 1966 (Békés, 2000);

Other authors, such as Feifel and Branscomb in 1973 (Békés, 2000) distinguished between three levels of anxiety: conscious fear, subconscious anxiety at the level of thoughts and fantasies about death and unconscious anxiety. The results of their study show that: at the conscious level the most noticeable reaction is to deny the fear of death, at the level of imagery and fantasy there is ambivalence while at the unconscious level there is a significant amount of death anxiety. The authors explained the results by the need for responding in a socially acceptable way (i. e. denial of death anxiety).

Littlefield and Fleming in 1985 (idem) suggested unifying the first two categories as opposed to unconscious anxiety, due to their different results, which did not show any significant differences between the three levels of awareness.

There are some authors who state that measures of conscious anxiety positively correlates with unconscious anxiety (1965, Martin and Wrightsman, in Békés, 2000). But these results, if they are interpreted in the light of other discoveries in the field of defence mechanisms, specifically repression and sensitivity, suggest that the measure of death anxiety evaluated with the classical verbal scales, do not necessarily evaluate the amount of anxiety but rather how much of anxiety's causes reach consciousness. (Békés, 2000).

Conclusion: Empirical data regarding conscious and unconscious anxiety are contradictory. On the one hand research shows a positive correlation between the two types of anxiety and on the other hand there are studies which show a negative correlation between them.

1. 2. Trait and state fear of death

This distinction was suggested by Littlefield and Fleming (Békés, 2000). Based on empirical evidence, the authors concluded that there is a constant dimension of death anxiety, which is independent of external influences (the trait aspect) and another dimension, which is sensitive to different life events (the state aspect).

Conclusion: There is trait death anxiety, which is relatively stable and state death anxiety, which is variable, affected by different stimulus, life events.

2. Factors which influence death anxiety:

2. 1. Vital danger and NDE phenomena.

Berman (Békés, 2000) studied in 1974 the influence of going through vital danger on the belief in afterlife. His conclusion was that these experiences have only a temporary influence on the belief in afterlife; in other words it affects only state death anxiety.

Moody (1989) notes that, according to the classical definition, death is a state from which there is no way of coming back to life.

Moody used for the first time the name of Near Death Experiences (NDE) for a whole class of intense phenomena near death. These types of experiences are also mentioned by Aristotle (Moody, 1989).

Morse (idem) reached the conclusion that near death experiences are faced by people who reach a critical point regarding their vitality and not by the severely ill people. In fact, people who had NDE did not really dye, even if their condition meets some death criteria and they were very close to it.

Positive NDE covers a class of experiences among which the most frequent are the following:

- separation of spirit from the body.
- sensation of passing the dying moment, the awareness that after a while one's own body is seen from an out-of-body perspective.
- feeling of being at peace, the lack of suffering and fear.
- a journey through a tunnel or in a dark space.
- an upward journey towards a source of light.
- meeting a dead person, or the Supreme Being.
- a quick review of one's own life including aspects which were forgotten long time ago.
- negative feelings and sensations associated with resuscitation and coming back to life.

Other experiences which are mentioned in relation with NDE phenomena are: time perception modification, visual and auditory perception of events which take place in other rooms during resuscitation, ignoring spatial obstacles (Moody, 1989).

Negative NDE feelings are considered to be less frequent, covering a class of terrifying experiences similar to infernal descriptions. Rawlings (Pilling, 1998), a cardiologist described most of recorded negative NDE and considers that the number of people who had such experiences is higher but through the use of defence mechanisms they forget them afterwards. Pilling (1998) points that Rawlings' research is not scientifically rigorous, but that his hypothesis deserves to be considered and tested.

Based on a study made by Gallup in 1982 (idem), every 20th person in USA has NDE. Not every such person goes through all the experiences mentioned above.

Several hypotheses aimed at scientifically explaining these phenomena were developed, either at the organic level or the psychological level. One such hypothesis was that NDE feelings are the result of CNS activity**,** specifically the excess of carbon dioxide in blood, of the endorphins released near death. There is another opinion, which hypothesizes that NDE is an autoscopic hallucination, a psychological defence mechanism as a reaction to agony.

However Moody (1989) notices that there are a few elements, particularly those related to out-of-body perception which cannot be explained by any of the hypothesis offered so far.

Morse (Moody, 1989) considers that religiousness does not affect the content of experiences but only their interpretation. The frequency of such experiences is equal among religious and non-religious people. He also considers that children's NDE feelings are similar to those of adults.

Moody (1989) points that less religious people became more religious as a result of NDE.

Ring (idem) after studying 102 cases of NDE concluded that religion does not affect the occurrence of NDE, but NDE feelings have a positive effect and leads to changes in one's way of thinking about world and one's self. The same author also considers that clinical death in the absence of NDE does not modify the attitude towards death. Based on empirical data offered by Ring's research Pilling (Pilling, 1998; Békés, 2000) argues that the resuscitation from clinical death, even in the absence of NDE determines significant modifications of the value system and of interpersonal relationships of those persons whose life was seriously jeopardized.

People who had NDE during clinical death show a decrease of death anxiety, an increase of belief in afterlife and often consider that their own relationship with divinity became more unmediated then before the near death event.

Conclusion: The vital danger affects the level of death anxiety. Empirical data is contradictory as regarding the specific influence, some authors considering that the modification is at the state death anxiety level, while others that it is at the trait level. The influence is mediated by the belief in afterlife and by beliefs regarding one's self. A particular class of phenomena which can affect these beliefs are NDE phenomena.

2. 2. Death of a close person

Feifel and Branscomb (Békés, 2000) did not find any relation between the number, the time of occurrence of such loses and the measure of death anxiety, neither at the conscious level nor at the unconscious level. Martin and Wrigtsman (idem) concluded in the same way after their research with religious people.

In 1967 Feldman and Hersen (idem), psychoanalytically oriented authors pointed out the correlation between the frequency of nightmares and the measure of death anxiety and also to the fact that death of a close person leads to an increase of both death anxiety and frequency of nightmares.

These contradictory results could be better understood if they are analyzed in the larger context of afterlife beliefs.

Conclusion: Empirical evidence regarding the influence of death of a close person on the intensity of death anxiety is contradictory. Some authors argue that the two phenomena are not correlated, whereas others consider that death of a close person contributes to an increase of death anxiety and the frequency of nightmares.

2. 3. Personality traits

In this area research has started in the eighties.

a). Anxiety

One can hardly find a better ground for anxiety than death. "Death is the supreme unknown, all our fears without object can be projected on it, in this sense death leaves behind all obscure phenomena anxiety related" (Békés, 2000, p. 23).

a. 1.) General anxiety

Dickens (Békés, 2000) noticed the strong covariation between the level of general anxiety and death anxiety. In the beginning of research on this topic many specialists considered that death anxiety was a particular manifestation of general anxiety. Further research (Kastenbaum and Costa, idem) showed that general anxiety and death anxiety cannot be regarded as similar concepts, opinion which now is generally accepted.

a. 2.). Fear of castration

Freud (Békés, 2000) saw the origin of death anxiety in the guilt feelings for the deceased and in the fear of castration manifested through fear of bodily injuries.

a. 3.). Actual fear of death

Death is the "object of the most important and least controlled humanity's fears" (Békés, 2000, p. 24). We cannot talk about death without touching the problem of taboo. "Originally the notion of taboo meant neither sacred nor impure, but was related to demons that which should not be touched, and by this emphasized an important and common feature of these two polar concepts, showing that these two areas, of the sacred and the impure were similar at the beginning, and were distinguished only latter on. " (Freud, 1991, p. 76).

Wundt (Freud, 1991), explained taboo interdictions regarding the dead person by saying that the spirit of the dead person changed into an evil spirit from which family members should protect themselves. Kleinpaula (idem) favours the idea according to which dead people kill. This belief explains the old ritual of burying the dead on islands, or on the other border of a river. Initially all dead people were considered to be malevolent and then only those who had a reason to be angry were considered as such (e. g. those who were killed, lovers who dead before satisfying their desires).

Freud (1991) considered that those who were still alive were confronted with ambivalent feelings - affection and hate - toward the dead person and that "death's taboo came from the opposition between conscious pain and unconscious

satisfaction regarding death". (p. 71). From this perspective the hostility attributed to the dead person is nothing else but the hostility projections of the mourning people. The evil spirits are created through the projection mechanism, which helps the resolution of an affective conflict (Freud, 1991, p. 73).

Polcz (Békés, 2000) as well as several psychoanalytically oriented authors considers that the source of death anxiety is separation anxiety of the new born child and an archaic anxiety without object or cause.

Fear of death was empirically studied also by analyzing the frequency and the content of nightmares and the results of death anxiety scales. Feldman and Hersen in 1967 (Békés, 2000) concluded that there is a relationship between nightmares and death anxiety due to the reappearance of problems which were not worked through in the form of dreams.

Handal and Richlal in 1971 (idem) state that there are several connections between these two phenomena but the correlation is not linear. Both persons who had high scores on death anxiety scales and those who had low scores were confronted more often with nightmares then people scored in the middle. These results are worth being related to another personality trait, namely sensitivity/repressiveness.

Conclusion: Theories regarding the source of death anxiety point on one hand towards the projection of guilt feelings on the dead person and, on the other hand towards separation anxiety, and fear of bodily injuries.

Empirical evidence suggests that the intensity of death anxiety correlates with the frequency of nightmares.

b). Repression / sensitivity

Sensitive people react with a considerable preoccupation with death while the repressive persons try to avoid the topic. Research shows that there is a strong negative correlation between repression and scores of death anxiety on scales that assess the conscious fear of death. Persons who are predisposed to sensitivity have higher scores on these scales.

Rosenheim and Muchnik (Békés, 2000), in 1985, found in their research that while sensitive persons show higher conscious fear of death, repressive persons have a much higher anxiety at the unconscious level. As regarding the relation between sensitive mechanisms and repressive ones literature on this topic shows greater consensus. Littlefield and Fleming's empirical data (Békés, 2000), favours the idea according to which results obtained with instruments which assess conscious fear of death and unconscious death anxiety positively correlate. The interpretation of these results is even more important if we take into account that repression can already be present at the perception level of the topic of death and this affects the reaction to death (implicit the answers to tests and questionnaires).

Conclusion: Repression / sensitivity and the intensity of conscious / unconscious death anxiety are correlated. These mechanisms can operate not only during the processing of data but also at the perception level.

c). Locus of control

The cognitive style characterized by internal or external locus of control influences greatly our emotions in dealing with external events. Death is an event that can be controlled in a very small degree and its unpredictability is one of its most terrifying aspects.

Dickens (Békés, 2000) believes that people who have an external locus of control face a higher death anxiety compared with those who have an internal locus of control and so are more focused on the more controllable aspects of life.

Internal control is related to repression whereas external locus of control is related to sensitivity (idem).

Conclusion: Some authors consider that external locus of control, which correlates with sensitivity leads to an increase of death anxiety, while internal locus of control, which is related to repression correlates with a lower death anxiety.

d). Intelligence

There is little evidence regarding the relation between intelligence and fear of death. Studies focused on this aspect generally show a negative correlation between these two variables (Jeffers, Niccols and Eisdorfer in Békés, 2000).

In the same year Rhudick and Dibner (idem) examined the maturity of attitude toward death of teenagers. After analyzing their essays on this topic and their academic performance the authors concluded that: teenagers who had lower academic results had higher death anxiety, which was communicated indirectly through euphemisms and comparisons, while teenagers who had higher academic results seemed to accept in a higher degree the inevitability of death and showed a more refined range of attitudes toward death.

In 1964, Stacey and Reichen (idem) studied the attitude toward death on a group of mental disabled people and on a group of non-disabled people. The authors found that fantasies death related of disabled persons were scarce while their emotional reactions toward death were much stronger compared with non-disabled persons.

Békés (2000) draws attention to the necessity of analyzing those factors which derive from high or low intelligence and which influence these attitudes. One such factor mentioned by the author is the preference for different defence and coping mechanisms (assuming that highly intelligent individuals are more predisposed to rationalizing, intellectualizing and consistency of opinions). To this the author adds the influences of trait general anxiety and the need for social desirability.

Conclusion: The little available empirical data show a negative correlation between intelligence and death anxiety.

e). Self-actualization and integration

Every person limits himself to particular achievements and this means that he gives up some alternatives and potentialities.

Jung (1961) points out that some people loose some valuable part of their past, others of their future. These losses and the reaction to them are different from one person to another and these differences result from the presence or absence of neurosis.

The neurotic individual suffers because his is not aware of his problems. The suffering of the individual who is not neurotic comes from his conscious problems without himself being ill. Jung points out that "it would be a serious misunderstanding to confuse the existence of problems with neurosis. (1961, p. 116). The neurotic is rather a person who can never have things as he would like them in the present, and who can therefore never enjoy past" (Jung, 1961, p. 121). "Life avoidance does not exempt one from the law of aging and dying. (. . .) The neurotic person who tries to escape life's necessities does not gain anything and takes over the burden of a premature aging and death, which must have terrible consequences…" (Jung, 1999, p. 246).

The subjective feeling of self-actualization or failure and the meaning/lack of meaning attached to death are not unrelated with death anxiety.

Robinson and Wood (Békés, 2000) consider that the more integrated is death in the personal constructs of someone, the lower will be his/her scores on a death anxiety scale.

Neimeyer and Chapman (idem) emphasize the role of self-actualization in the decrease of death anxiety. The authors state that those persons who have smaller discrepancy between the actual self and the ideal self have lower death anxiety, compared with persons who indicate a higher discrepancy.

Vargo and Batsel (idem) believe that the simultaneous presence of these two factors leads to a greater effect of anxiety decrease than either of them taken separately. Other researchers supported the results of their studies. Thus Robinson and Wood (idem), showed that anxiety reduction was greater for those persons who were characterized both by integration and self-actualization. The same authors believe that if taken separately, self-actualization has a greater anxiolitic effect while other authors consider that there is no relation between self-actualization and death anxiety (Richard and Jex, in Békés, 2000).

Conclusion: empirical data regarding the correlation between self-actualization and integration on one hand and death anxiety on the other hand are contradictory. Some authors consider that there is no correlation between these phenomena, while others believe that self-actualization and integration correlate with a lower death anxiety. Theoretical data favours that latter opinion.

f). Attitude toward life

Several authors cited by Békés (2000) showed that people who believe that their life is meaningful and who have a sense of well being, face lower death anxiety.

2. 4. Religiousness

Empirical evidence for the relationship between religiousness and fear of death is inconsistent, either due to the instruments used, to sampling deficits, or to the reductionist interpretation of data (Békés, 2000). Empirical studies have

contradictory results but they can be interpreted psychologically. Thus, the negative correlation found by several authors between religiousness and adjustment to death phenomena can be explained by the power which moral and religious norms have on common people who are aware that they cannot completely obey them so they have feelings of guilt, fear of punishment following the Last Judgement; all these can lead to an increased death anxiety at least for some of the believers. On the other hand, data which suggest that the more religious a person, the easier he/she can adapt himself/herself to the phenomenon of death, can be explained by the hope and confidence gained by some believers through their religion and their belief in a reward to come in Afterworld.

Empirical data that show no influence of religiousness on adjustment/lack of adjustment to death can be explained by the phenomenon of secularization. Rosenheim and Muchnik (Békés, 2000) following their studies consider that religiousness influence only unconscious death anxiety but not conscious anxiety, providing evidence for Jung's ideas about religiousness and its integrative function. They also argue against Freud's idea regarding the neurotic effect of religiousness, which implies that religiousness leads to an increase of unconscious death anxiety. It is equally legitimate the Freudian argument which regards religion as a way of sublimation whose efficacy is demonstrated by religion's survival through history.

Other studies (Leste in Békés, 2000), show a U-shaped correlation between belief in Afterworld and death anxiety, meaning that both belief in Afterworld and lack of faith lead to a decreased level of death anxiety, compared with people who do not have an unequivocal stance regarding existence/non-existence of an Afterworld.

Leste (idem) shows that it is the inconsistency of beliefs (uncertainty, hesitation) that leads to intensification of death anxiety. This means that extremely religious people or convinced atheists face lower fear compared to those who have medium scores on religiousness scales. The latter, being more uncertain of their own stance are threatened both by the possibility of the Last Judgement and by the perspective of loosing precious interpersonal relationships.

From this point of view, loss of a close person could gain an additional meaning, since it can facilitate a deeper analysis of death. This can lead to such an increase of death anxiety that would force one to take a definite stance regarding afterlife, which then would contribute to a decrease of death anxiety (Békés, 2000).

Belief in an Afterlife not necessarily leads to decrease of death anxiety because it is a function of: a). *image of afterlife*, which is different from one religion to another, b). *degree of religiousness*. and c) the intrinsic and extrinsic character of religious belief. Regarding the second factor, it is generally agreed that most people do not have such a powerful faith as to be able to dissolve the negative, anxiety provoking aspects of religious dogmas (Kelly; Leming in Békés, 2000).

Those studies that compared the level of death anxiety of people who adhere to various cults found only minor differences. There were bigger differences

between the object components of these fears; Israeli people are more afraid of the process of death, compared with Protestants, Catholics rank highest on fear of Afterworld while Israeli people rank lowest (Diggory and Rothman, in Békés, 2000).

These contradictory results can be explained if we consider the opinion of Alexander and Adlerstein, which are also supported by Leste (Békés, 2000), according to which it is not the content of religious beliefs which affect the level of death anxiety, but *the religious or atheist confidence* which leads to decrease of death anxiety. *The intrinsic and extrinsic character of religious belief* was first mentioned by Allport (Békés, 2000) in a study made in 1967. The author thought of these two variables as being extreme points on a continuum. The extrinsic variable is related to external and superficial religious manifestation. In Allport's opinion persons with this kind of orientation rather use religion, whereas those who have an intrinsic orientation experience it. In fact most people are situated somewhere in between on this continuum.

Extrinsic religious orientation:

- is centered on one's self (Kahoe in Békés, 2000);
- from the viewpoint of values it is focused on material goods, financial possessions and prestige (Spilka, idem);
- correlates with a stronger tendency to prejudice, compared with intrinsic orientation (Wilson in 1960; Allport and Ross in 1967 in Békés, 2000);
- correlates with a deeper death anxiety (Kahoe, idem) and with an approach to death from the perspective of pain, loneliness, unknown and confusion (Spilka et al., idem).

Intrinsic religious orientation:

- is centered on tasks (Kahoe, idem);
- is focused on human values and leads to more favourable, more accepting attitudes, both to one's self and to others (Spilka; Spilka and Mullin, idem);
- correlates with lower death anxiety (Thorson and Powells, idem), and with relating to death from the perspective of the reward to be given in Afterworld. (Spilka et al., idem).

Other authors studied the relationship between religiousness and fear of death for different age. Research of this aspect is contradictory, too. Some authors found that aging determines an increase in religiousness while others disconfirm these results. Freud considered that religion was born out of death anxiety. In this sense, religion is efficacious if it reduces intensity of this anxiety, which can happen in the case of intrinsic orientation but not in that of extrinsic orientation, which actually heightens this fear.

Conclusion: The relationship between religiousness and level of death anxiety, if globally examined, leads to results which cover the whole range of possibilities and this inevitably determines contradictory data. Meanwhile theoretical data is able to explain each of these contradictions taken separately. In order to reach an explanation for all these contradictions taken together is necessary

to approach the phenomenon of religiousness in a more refined manner, taking into account the content of religious ideas, the intrinsic/extrinsic character of faith and the degree of confidence of faith.

2. 5. Demographic variables

a). Age

The child's image and attitude toward death are constructed step by step. Nagy (1997) in 1936 did the first empirical research in this field, and she elaborated a stage model on ontological development of children's image about death. Children, according to the cited author, reach a realistic approach to death between ages 9-12. Before that period the child's approach to death is animistic and personified (Školka, 2001).

In *adolescence* along with the process of facing existential thoughts a redefining of attitude toward death takes place. Modern research is more concerned with adolescents' emotional reaction to death than with their image about death. Dickstein (Békés, 2000), consider that adolescents' ideas about future play a decisive role in the development of their attitude toward death. Wohlford, Kastenbaum and Costa (idem) show that adolescents who confront themselves with a strong conscious death anxiety have more limited views about their future, compared with those who have a different attitude toward death.

Gesser et al. (Békés, 2000) show that although adolescents' intellectual development implies understanding the irreversibility of death, teenagers project their own death somewhere in the far future, trying to avoid the thought of it.

Jung (1994, 1999) notes that in *midlife* a radical change in the attitude toward death occurs. It is a psychological revolution, "from noon, from the beginning of dusk" (1994, p. 52). Time is measured not in reference to years which passed since birth, but to these left until the end of life.

This significant change in a person's psychological life occurs in his/her late thirties. At first it is neither conscious nor evident. In the absence of religious frame of reference – for aging, death and eternity – the modern person enters this stage of life unprepared, at a time when the ideals and moral values of adult life cannot be maintained any more. Modern man still believes that these ideals and values will serve further on in the second part of his life.

Life can be lived with zest well after youth has passed if "the retrospective look to all that vanishes does not paralyze our look" (Jung, 1999, p. 256).

Some empirical research shows that:

a). 45 – 54 years old people face a stronger fear of death compared with those who are older than 55 (Bengston in Békés, 2000);

b). Among people who had a cardiac attack, those who were of 46 – 54 years of age faced a stronger death anxiety (Kumar and Mohan, idem),

c). Data from studies of Gesser et al. (idem) suggest that older people are more concerned about death.

In optimal conditions there is a decrease of anxiety in *aged people* and various forms of death acceptance develop. (Gesser et al., Stevens et al., in Békés, 2000).

Gesser et al.,(1987), concluded that fear of death and of the process of dying are relatively high in young people, reach the highest point in midlife and decreases in the third age. Empirical data suggest that aged people tend to see death from one of the following perspectives: *1. neutral* (as a natural component of life), *2. acceptance of it as an escape from life, 3.* a*cceptance of it as a means to getting closer to divinity* (Kulcsár, 1998; Békés, 2000). In the same time aged people have a lower tendency to deny the existence of death anxiety, compared with young people (Westerman et al. idem).

Research done by Kastenbaum in 1992, lead to the conclusion that there is not a strong correlation between age and fear of death (Tomer and Eliason, 2000).

Neimeyer et al. (1995) believe that there is a linear correlation between age and fear of death with a decrease of anxiety starting in adolescence (Tomer and Eliason, 2000).

Békés (2000) concludes that aged people have more differentiated attitudes toward death, compared with young and middle aged people. There are data that support the ericksonian opinion according to which once people reach the integrity of self in old age, the acceptance of one's own death occurs. Also, Flint et al. (idem) details this topic by relating satisfaction regarding one's own life with acceptance of death.

Conclusion: There is a general tendency at the theoretical level in the literature on this topic to assume an inverse relationship between aging and intensity of death anxiety. Empirical data are contradictory, suggesting lack of any correlation, and both linear and non-linear correlation, or negative correlation.

b). Gender

Data regarding death anxiety differences between sexes are controversial. Some authors found that women have stronger fear of death, compared with men, others reached opposite conclusions, while still others found no relationship at all.

Middleton (Békés, 2000) did not find any differences regarding the intensity of death anxiety feelings, but concluded that women think more often about their own death and deal with higher anxiety while doing this, but on the whole they are less concerned about death, compared with men.

Thorston (1998) showed that women faced more pronounced fears regarding what would happen with their body after death and the pain of dying process, while men were more afraid of dependency. The only sex difference found by Lester (idem) was the higher fear felt by men regarding the pain provoked by their death to others. The author did not find any sex differences regarding the consistency of attitudes toward death and general fear of death.

Temper et al. (idem) studied this topic from the masculinity-femininity point of view and concluded that high femininity scores in women correlated with fear of dying process of others, while high femininity scores in men correlated with

fear of one's own death and death of others. Lester (idem) showed that high scores on masculinity in the case of young male students correlated with fear of loss of consciousness in the process of dying. These results must be understood in the light of the link between general anxiety and death anxiety.

Conclusion: Empirical data regarding correlation between sex and death anxiety are controversial. Some data suggest that there are sex differences, others suggest no differences, while still others show differences not regarding the intensity of death anxiety but regarding the components that provoke this anxiety.

c). Academic achievements

Research of this aspect does not show any link between the length of time spent in academic education and fear of death (Békés, 2000). Feifel and Branscomb (idem) state that length of education affects neither conscious, nor subconscious or unconscious fear of death. Swesnson (idem), following his research with aged people, show that uneducated ones avoided more discussions about death and used a more limited language, compared with more educated people. The latter ones were able to express their feelings in a more refined way, irrespective of their wish to die.

Conclusion: The little research done on this aspect reached controversial conclusions, most of it suggesting no relationship between academic education and fear of death.

d). Socio-economic status

Fear of death is a universal human experience. A question arose whether there are any differences related to status, roles, financial status behind the similarities at the macro level; or maybe the origins of this feeling are so deeply rooted that it is not affected by these variables.

Conclusion: Studies done on this aspect showed that there is no correlation between socio-economic status and fear of death. The correlations found were rather related to intelligence and education than to other factors.

2**.** *6. Professional status*

There are several relationships between attitude toward death and professional status. On one hand attitude toward death can influence the choice of profession and on the other hand current job tasks can change this attitude. This is particularly true in the case of people who work in environments in which death is often present, such as: doctors, nurses, firemen, policemen, people in funeral services (Békés, 2000).

In the medical field, choosing to assist the terminally ill people certainly happens in the presence of a particular attitude, one that can be situated at either of the extremes. This choice may be explained either by a low level of death anxiety, or by a high level of death anxiety, which search for a resolution through a direct confrontation with death, or by rejecting it. This non-acceptance can be seen in the heroic effort of doctors to do all that is possible for patients who have no more chances to survive.

Some studies showed that fear of death is more pronounced in the medical field, compared with other fields (Feifel et al., in Békés, 2000), other authors found no differences, while still others consider that, on the contrary, students face a lower death anxiety, compared with practitioners. The same studies suggest that those who work in the area of crisis intervention have a more pronounced anxiety of their own death, but not regarding others' death.

Conclusion: There is a reciprocal relationship between death anxiety and choice of profession. Theories can explain all possible relationships that may be found between them. Empirical data are contradictory, both regarding the intensity of death anxiety in medical professions, compared with other profession and the influence exerted by the passage of time and accumulation of professional experience on death anxiety.

2. 7. Illness

Fear of death and illness are in a complex, non-linear relationship, for it is argued that anxiety does not increase together with the severity of the illness process (Tomer and Eliason, 2000).

Chronic illness, because of the continuous confrontation of the person with degenerative processes or by the vital threat derived from it, force the person to clarify his/her attitude toward death. Sometimes this happens only in the case of an acute crisis. Kumar and Nirmala (Békés, 2000), showed that following a hearth attack, an increase of death anxiety occurs, but this phenomenon is temporary, thus affecting only state death anxiety.

Hayslip et al., (idem) based on their studies done in the nineties with healthy individuals and persons with AIDS concluded that there were no differences between the two groups regarding conscious death anxiety, but data suggested that persons with AIDS confronted themselves with deeper unconscious death anxiety, compared with the control group. Hintze et al. (Békés, 2000) showed that for these people death anxiety is strongly related to the severity of illness.

Gielen and Roche (idem) showed in the eighties that attitude toward death of people affected by Huntington's disease was mainly one of acceptance of death, seen as a way to escape from a life full of worries and suffering.

Several mental disorders progress together with an increase of death anxiety, such as: obsessive-phobic neurosis is directly linked with feelings death related in about 70% of cases (Yalom, Békés, 2000); schizophrenia, depression, Templer (idem); manic-depressive psychosis, in the opinion of Khana et al. (idem), various phobias (Person, idem), panic (Starcevic, Standish idem); hypocondria (Starcevic, idem); depersonalization (Stolorow, idem); substance abuse (Kumar et al., idem); alcoholism (Maqbool, idem).

Conclusion: Research of the relationship between the severity of illness and conscious and unconscious death anxiety found either a linear or a non-linear relationship. It can be concluded that this is a very complex relationship, mediated

by factors such as: the type of illness, chronic/acute character, severity of illness and also individual features.

In 1994 Tomer reviewed the most important psychological theories which have proved to be prolific in understanding people death attitudes. It is beyond the present article's purpose to analyze in depth all these theories. According to the cited author these theories are:

1. Self Realization Theories (Maslow, 1968; Rogers, 1959);
2. Search for Meaning Theories (Frankl, 1963; Maddi, 1970; Antomowski, 1979; Taylor, 1983; Thompson and Janigian, 1998);
3. Personal Construct Theory (Kelly, 1955).
4. Theories of Denial and Positive Illusion (Freud, 1946; Neo-Freudians; Becker, 1973; Snyder, 1988; Weary, 1979; Miller, 1976). Tomer (idem) presents three such of theories:
    a. The two factor model of death anxiety (Gililand and Templer, 1985-86).
    b. Terror management theory (Rosenblatt, Greenberg, Solomon, Pyszczynski and Leon, 1989).
    c. Illusion of self control (Taylor and Brown, 1988).
5. Multiple Selves and the Self-Concept Discrepancy Theory (Markus and Wurf, 1989; Markus and Nurius, 1986; Higgins, 1987).
6. Erickson's Psychosocial Theory (1963).
7. Theories of Intellectual Development in Adult Age-Postformal Models and Models of Wisdom (Carse, 1980; Broughton, 1984; Basseches, 1984; Labouvie-Vief, 1982).

An examination of empirical literature realized by Neymeier (Tomer, 1994) reveals frequently discrepancies and inconsistenc among studies.

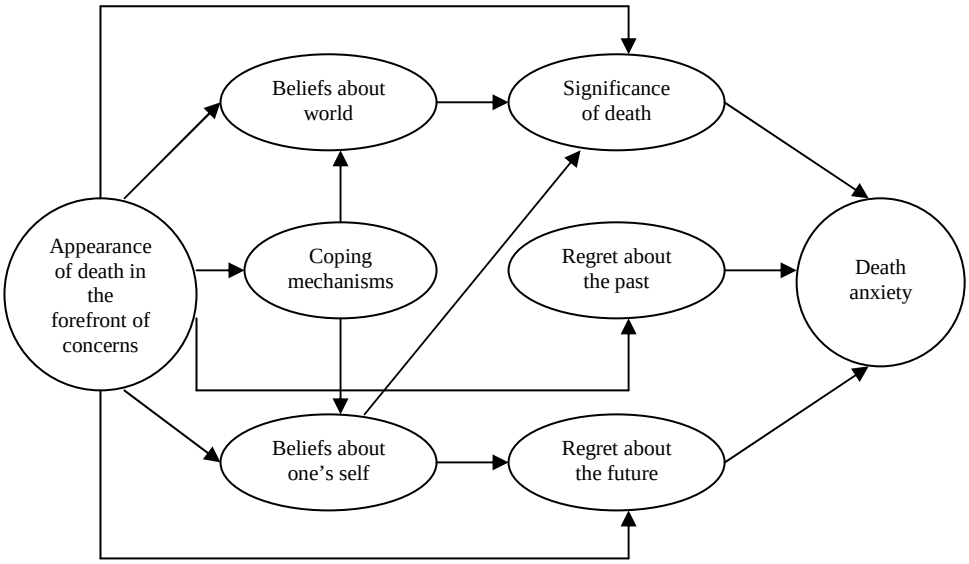
One of the problems in the field of death studies is "almost exclusive reliance on cross-sectional designs and on unsophisticated exploratory methods of analysis" (Tomer, 1994, p. 22).

"This situation suggest the necessity for a complex model, possibly based on an integration of theories" (Tomer, 1994, p. 21).

3. A comprehensive model of death anxiety

In 1996 Tomer and Eliason developed a comprehensive model of death anxiety. The authors tried to identify the factors that precede and contribute to the development of this anxiety. They designed a multifactorial model which was intended to provide an explanatory framework for previous contradictory data on this topic. The authors restricted their model to anxiety regarding one's own death.

Tomer and Eliason (2000, p. 68), start with a working definition of death anxiety, seen as " that negative emotional reaction provoked by a representation of a state in which the ego no more exists".



The Model of Death Anxiety, by Tomer and Eliason (2000, p. 70)

3. 1. Direct determinants of death anxiety.

In the opinion of Tomer and Eliason (2000) fear of death has three *direct determinants:*

3. 1. 1. Regrets about the past, resulted from realization of unfulfilled fundamental wishes.

The person may have feelings of guilt related to not achieving certain cultural dependent goals, which he/she thinks he/she should have achieved. Self-blame leads to the intensification of death anxiety (idem).

3. 1. 2. Regrets about the future, resulted from accepting the impossibility to achieve some fundamental goals in the future due to the shortage of the time left.

The more important those goals from the viewpoint of personal identity and self-realization, the bigger the frustration and disappointment and subsequently, the higher the death anxiety (idem).

The relationship between regrets and fear of death is seen in various ways in the psychological literature.

Research done by Neimeyer and Chapman (idem) in 1980 showed a negative correlation between self-realization and fear of death. This phenomenon can be based on Roger's conception according to which self-realization facilitates death acceptance because those who accomplished more in life have, objectively speaking, less to loose, compared with their fellows who did not self-realized. This finally means that self-realized people have fewer regrets regarding the past and the future. Erickson's psychosocial theory (in Tomer and Eliason, 2000) supports these

results by showing that people who were labeled by the author as wise based on certain criteria, accepted their own death, because they reconciled themselves with their own life (they had fewer regrets about the past), and they had little to loose (they had fewer regrets about the future). Becker and Firestone (idem) believe that etiology of pronounced death anxiety should be searched "in the ontological guilt feelings resulted from an unfulfilled life" (Tomer and Eliason, 2000, p. 72).

Positive correlation between self-realization and fear of death can be explained by those changes that can occur in the fundamental goals and plans of a person, exactly in connection with self-realization. An increase of expectancy regarding the future can determine an increase of regrets for the unattainable things in the future and this may lead to an increase of death anxiety (Firestone, idem).

Neimeyer et al. (idem) draws attention to the relationship between the actual self and the ideal self on one side, and sense of self-realization on the other side. Specifically, the measure of the discrepancy between the actual self and the ideal self gives information regarding existing regrets about the past and the future. At the same time a big discrepancy between actual self and ideal self leads to higher death anxiety. Studies such as those done by Greenberg et al. (Tomer and Eliason, 2000) show that those individuals who have high self-appreciation have a lower need for denial of fear of their own premature death. Other authors, (Amenta and Weiner, idem) note the positive correlation between low self-appreciation or sense of life's uselessness and fear of death. Self-appreciation is part of the ego related beliefs and influence fear of death through regrets about the past and the future.

3. 1. 3. The meaning attached to death.

The degree to which somebody considers that death is meaningful depends of personal beliefs about self and the world, one's own religion, philosophy and life conditions.

Those who consider that death is meaningless, painful, incomprehensible score higher on death anxiety scales (Holcomb, Neimeyer and Moore, in Tomer and Eliason, 2000).

Wong, Rekel and Gessel (idem) identify two attitudes that render death meaningful: 1. Acceptance of death in the light of beliefs in an Afterworld and immortality; this attitude inversely correlates with fear of death.

2. Acceptance of death as a way of escape from a life full of suffering, which inversely correlates with fear of death.

Lerner (idem) adds a third attitude which refers to:

3. Belief in a fair world, which, in his opinion, predisposes to attaching meaning to death.

"The combination of these three patterns determines the influence that death's coming in the forefront has on death anxiety" (Tomer and Eliason, 2000, p. 70).

3. 2. Dimensions of psyche activated by the coming of death in the forefront of a person's concerns.

The authors consider that the three direct determinants of death anxiety are also affected by the frequency of someone's thinking about his own death, *the degree to which death comes in the forefront of his preoccupations*. Once death reaches the centre of attention, it:

3.2.1. activates personal beliefs about one's self;

3.2.2. activates personal beliefs about world;

3.2.3. activates various coping mechanisms available to the person;

Authors consider that there are certain coping mechanisms typical for confrontation with death:

a). The process of remembering and global review of personal life.

Butler (Tomer and Eliason, 2000) believes that reviewing one's own life and doing the autobiography are coping mechanisms used for decreasing death anxiety and that they are not used only in old age. In his opinion all these facilitate the integration of conflicts from the past. Webster (idem) argues that the relationship between these coping mechanisms and fear of death is more complex and not necessarily a direct and one-way relationship. The author shows that along with the process of aging and coming of death in the forefront of concerns, the process of remembering plays a more important role in the reduction of anxiety. But reviewing of personal life does not always facilitate a real adaptation and is so because the conclusion of this review may be a negative one which can lead to intensifying regrets, which in turn, leads to feelings of self-blame and depression.

Positive vs. negative conclusion of remembering could be influenced by other factors, such as: self-appreciation/ depreciation, physical condition, which mediate death anxiety.

Conclusion: The reviewing of personal life can lead to both increase and decrease of regrets regarding the past, also affecting the person's self-image.

b). Life planning.

Planning is a process directed toward the future that includes wishes, resources, priorities, assessment of which becomes important when death comes in the forefront. Baltes et al., (idem) introduced the concept of "compensation through selective optimization", which happens to aged people. This phenomenon allows aged people to maintain a satisfying self-image despite the losses that come together with aging. The essence of compensation through selective optimization consists on one hand of *choosing certain goals, which have particular significance* for the person, for the attaining of which he/she can marshal valuable resources and from fulfilling of which he/she expects great satisfaction. On the other hand it consists of *setting more realistic goals*, giving up the unrealistic ones, modification of criteria for failure and success. Levinson (idem), shows that these changes occur together with a gradual recognition of mortality condition and together with the

disappointment that follows "the giving up of immortality chimera" (Tomer and Eliason, 2000, p. 79).

Life planning together with the reviewing of life influences self-image. Changes in life aims allow for amelioration of discrepancy between actual self and ideal self and thus decrease the intensity of regrets regarding the past and the future. Giving up unrealistic goals can lead to diminishing of regrets regarding the future. The reassessment of essential goals can positively influence the regrets about the past.

Conclusion: An adequate hierarchy of goals and following realistic goals lead to diminishing future related regrets and positively influence self-image.

c). The identification of the person with various dimensions of his own culture.

Greenberg, Pyszczyski and Solomon (idem) state that adhering to the worldview and specific values of one's own culture results in protecting the person from awareness of the mortality condition and from the accompanying anxiety. All these are possible through the influence exerted on self-appreciation by different worldviews.

Conclusion: The identification of individual with his own culture leads either to an increase or a decrease of his level of self-appreciation. Self-appreciation can protect the individual from anxiety, particularly from the anxiety of one's own death.

d). Ego-transcending phenomena.

"If death is equivalent with the dissolution of ego, then the only possibility for the ego to accept death is transcendence" (Tomer and Eliason, 2000, p. 80). Planning and reviewing personal life are mechanisms that can also have the function of liberation, of *transcending the ego*. The same ego-transcending function is carried out by so called *generative* phenomena (McAdams, idem) and phenomenon of loosing the awareness of ego in the "flow" phenomenon. (Csíkszentmihályi, idem).

Generative phenomena refer to various forms of creativity: the creative bird, (the well being of future generations), creative actions and creative narratives (memories). Creative and value- generating phenomena can be regarded at least in part as answers given when death comes closer, as ways of adaptation to the idea of personal death.

Both the phenomena of loss of consciousness gained for the purpose of experiencing becoming one with World, with Transcendent, and the generative ones can modify one's personal beliefs about self and world, due to the fact that " personal ego becomes a component of an embracing entity (cosmos) and the whole universe is filled with meaning and maybe with consciousness" (Tomer and Eliason, 2000, p. 81).

Conclusion: Ego-transcending and generative phenomena protect people from death anxiety through the beliefs about World and one's self.

To summarize, the model considers that fear of death increases as the individual is confronted with more intense regrets regarding personal past failure and expectancies of future failure, or he/she considers death as meaningless. Together with the aging process, because of the increasing sense of getting close to the moment of dying, the importance of coping mechanisms increases, all these resulting in a decrease of death anxiety.

The model of Tomer and Eliason is valuable since it allows to approach the death anxiety phenomenon from a dynamic and multifactorial perspective and to explain the previous contradictions, especially through its facilitation of a non-reductionist approach of human psyche.

Davis (2001) states that generally in research, in order to understand the variation in the stress response, one of the three following approaches is used: a. personality approach, b. coping approach, and c. "psychological issues" approach.

a. The personality approach suggests that pre-existing vulnerability factors (disposition, pessimistic attributional style, ruminative coping style) and personal characteristics expose people to a greater risk for negative consequences of stress (Metalsky, Abramson, Seligman, Semmel, and Peterson; Peterson and Seligman in Davis, 2001). Other researchers (Carver in Davis, 2001) suggest that the possession of certain traits (for example: optimism, mastery) increase the positive outcomes subsequent to adversity.

b. The coping behaviour approach focuses on the efficacy of different coping activities in stress conditions (Lazarus and Folkman; Valentiner, Holahan, Moss in Davis, 2001). But authors like Coyne and Gottlieb (idem) believe that as long the research focus is "on coping and not on the underlying and changing issues with which one is coping" the understanding of the coping process will remain incomplete, finding will be "inconsistent and ungeneralizable across studies" (Davis, 2001, p. 139).

c. The more recent psychological issues approach (Davis, 2001), "focuses on understanding the psychological issues which are evoked by people coping with trauma and loss" (p. 139). This approach underlines the unique character of every person's experience with trauma and loss. "The question addressed here is not so much <how is one coping> as much as it is < with what is one coping >? In this respect, it attempts to bridge narrative and qualitative accounts of people's experience of loss or trauma with the largely qualitative approach typical of the first two approaches" (p. 139).

Davis (2001) discusses about two psychological issues: (1) 'counterfactual thoughts' (if only, what if) – in the social psychology literature these kind of thoughts are termed in this way because "they take the form of mental replays of scenarios or situations where the outcome is altered to be counter to the fact" – and (2) 'the powerful need for meaning' – in the process of finding benefits

in/following the battle of experience of loss, as making sense of the loss (p. 140). In the author's opinion "making sense of loss involves the task of maintaining or rebuilding threatened worldviews, finding benefit seems to involve the task of maintaining or rebuilding threatened sense of self" (p. 146).

Authors like Anderson, Schwartz (Arvay, 2001, p. 216) from a constructivist point of view state that: "there is no single truth or reality that can be known. … truth is not discovered but is created or invented". On this base Arvay (2001) concludes: "meaning is self-referential, relational, and dialogical – narrative as a form of inquiry is a good fit for human scientists researching the construction of meaning" (idem). Polkinghore (Arvay, 2001) offered a new perspective on the self as a process, precisely a narrative process. This perspective can seriously influence the research. The narrative depends on the context, the context is always changing, such as, each plot will different, "continually being rewritten or reconstruct. The implication for research is that our findings will always be contingent, given the ever-changing nature of narrative construction" (p. 217).

Harvey et. al. (2001) shows that the 'account making' (story like construction) – in this topic, remembering and globally reviewing of personal life, for example – can be an efficient modality of coping if the story can be shared with confidants. This account making and confiding model underline the social interaction part of the problem not just the personal, private sphere of the work on the story.

Romanoff (2001) says that as the 20th century turns to a close, a new postmodern consciousness is presenting a powerful alternative to logical positivist paradigm, emphasizing the "local knowledge and the creation of meaning over discovery of broad, generalizable truths that exist in an observable reality" (Kave in Romanoff, 200, p. 246). Naratives are seen as an important source of information, being a powerful agent of change in psychotherapy (given its reflexive nature) and also a valid research tool. Sarbine (Romanoff, 2001) states that: "humans think, perceive, imagine, and make moral choices according to narrative structures" (p. 246). In opinion of Neimeyer (Romanoff, 2001) we know our world through the stories that we tell. Polkinghore shows that people shape experience through narrative meaning. From this point of view at the basis of psychological problem "there is a specific narrative, a scenario of threat, failure or helplessness" (Dafinoiu and Vargha, 2003, p. 188). The goal of the metaphorical stories used in therapy is "to offer alternative scenarios for particular situations which the client confronts, shaped in an acceptable manner to him/her" (idem, p. 189). Neimeyer (Romanboff, 2001) shows that: "some individual may have to create a different story to find meaning once again. This is the goal of narrative therapy following the loss" (p. 247). Narratives are social and linguistic constructions. (Romanoff, 2001). The narrative therapy's goal is to "enlarge the domain of experience The narrative research's goal is to understand human behaviour and meaning" (Neimeyer in Romanoff, 2001, p. 250).

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ON INDEXICALS AND MEANING

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ABSTRACT. Linguistic expressions whose reference varies from utterance to utterance are called indexicals. Indexical expressions which may be used *non*-indexically, either *anaphorically,* or as *bound variables* are called *true demonstratives*, and expressions that have *indexical* uses are called *pure indexicals*. When the principle of compositionality is applied in an attempt to establish the meaning of a complex expression containing pure indexicals some problems are likely to arise due to the fact that an indexical's referent is partly determined by extra-linguistic context. This paper presents a way of understanding the meaning of indexicals, such as 'today' and 'yesterday', taking into account the relationship between the sense and the reference of such expressions.

The aim of this paper is to analyse the Fregean theory of sense, in order to point out a parallelism between, on the one hand, the idea that the meaning of a sentence is a function of the meanings of its parts, and, on the other hand, the idea that the sense of a complex expression is a function of the senses of its parts. The principle of compositionality does not seem to work in either of these cases.

In the first case, one of the difficulties arises because the problem of how the meanings of sentences are generated from the meanings of words is complicated by the fact that there are parts of sentences that cannot be assigned an *entity* as meaning, but only a function of mapping some elements to others. After discussing the example "the father of", Davidson (1984: 18) concludes that

> "it is now evident that a satisfactory theory of the meanings of complex expressions may not require entities as meanings of all the parts."

and points out that Frege's theory does not give the meaning of a sentence but "an effective procedure for determining, for any singular term in its universe, what the term refers to." (Davidson 1984: 19)

In the second case, the problems we face arise in the presence of indexicals. Linguistic expressions whose reference varies from utterance to utterance are called indexicals. Kaplan (1989), whose work on indexicals is perhaps the most influential in the field, presents a list of indexicals, including personal pronouns ('I', 'he', 'she'); demonstrative pronouns ('this' and 'that'); the adverbs 'here', 'now', 'actually',

'presently', 'today', 'yesterday' and 'tomorrow'); and the adjectives 'actual' and 'present'. According to the Stanford Encyclopedia of Philosophy (2001)

> "[t]wo people who utter a sentence containing an indexical may say different things, even if the sentence itself has a single linguistic meaning. [...] An indexical's referent is determined, in part, by *extra-linguistic context* (for instance, the time and location of the speaker and the speaker's intentions). An indexical's referent can also vary from context to context. Thus indexicals are commonly called *context-sensitive expressions*. (The *content* of an indexical can also vary from context to context)."

Some of the indexicals mentioned by Kaplan (1989) may be used *non*-indexically, either *anaphorically,* or as *bound variables* (for example 'he', 'his', 'she', 'her' may function as variables bound by quantifier phrases such as 'every man', 'every boy', or 'every woman', 'every girl': eg. **Every woman believes she has the right to be free.**) Kaplan (1989) classifies these indexical expressions as *true demonstratives*, and expressions that have *indexical* (or *demonstrative,* or *deictic*) uses, as *pure indexicals*. As specified in the Stanford Encyclopedia of Philosophy (2001):

> "[t]he two types of indexicals differ in how their references are determined. The reference of an utterance of a true demonstrative is determined (in part) by the speaker's accompanying actions or intentions. [...] The reference of a pure indexical is *not* determined by the speaker's actions or intentions in this way. [...] We can say (loosely speaking) that the reference of pure indexicals is *automatic*, whereas the reference of true demonstratives requires something extra from the speaker."

I will further focus on pure indexicals. Given the sentences:

(1) Today is fine. (uttered on 3 March, 2003)
(2) Yesterday was fine. (uttered on 4 March, 2003)

if the sense of sentence (1) is a function of the senses of its parts, and the sense of sentence (2) is a function of the senses of its parts, then the sense of (1) is the same as the sense of (2) if and only if the sense of "today" is the same as the sense of "yesterday". As Materna (2000) points out, one of the few points where a nearly general consensus among semanticists can be expected is that sense is "what makes us understand a given expression", what helps us identify its reference. The two indexicals in the examples above have the same reference, 3 March 2003, as Perry would say, they deliver the same object, that we can identify if and only if we take into account the context of utterance. To deliver an object is the role of the indexical expression, but there is more in such an expression than the role. The role, and the context of utterance, and this "something more" give us the referent.

The question is the following: is this "something more" the *sense* of the indexical? And what are we to understand by *sense*?

This question takes us back to Frege, Perry, and Evans. I shall start with Evans's idea:

> "The way in which one must think of the reference of an expression in order to understand it is that expression's sense." (Evans 1981: 719).

Thus, in our case, the way in which I think of the referent of "today" is the sense of "today", and the way in which I think of the referent of "yesterday" is the sense of "yesterday". Is the way in which I think of one the same as the way in which I think of the other?

When I think of the reference of "today" I try to identify the object the word "today" refers to. In order to do this I take into consideration the fact that "today", uttered at a time t gives me the day α, meaning a span of time ranging between the hours 12 a.m. (that is, one second after 11.59 p.m. of the day α--1) and 11.59 p.m. (that is, one second before 12 a.m. of the day α +1).

When I think of the reference of "yesterday" I try to identify the object the word "yesterday" refers to. In order to do this I take into consideration the fact that "yesterday", uttered at a time t gives me the day β -- 1, meaning a span of time ranging between the hours 12 a.m. (that is, one second after 11.59 p.m. of the day β -- 2) and 11.59 p.m. (that is, one second before 12 a.m. of the day β).

There is also something else that I must consider, a relation between "today" and "yesterday":

if "today" is uttered at t and
"yesterday" is uttered at t then
$\alpha = \beta$ -- 1, therefore $\beta = \alpha + 1$

This means that "yesterday", uttered at a time t gives me the day $\alpha + 1$--1= α, meaning a span of time ranging between the hours 12 a.m. (that is, one second after 11.59 p.m. of the day $\alpha + 1$--2 = α -- 1) and 11.59 p.m. (that is, one second before 12 a.m. of the day $\alpha + 1$).

The reference I get is the same in both cases, but was the way in which I thought about it the same in all cases? If the relation between "today" and "yesterday" is acknowledged as *a priori*, then the answer to this question is *yes* and Evans's definition seems to work. The reference of an expression in this case if a function of sense + context of utterance.

What about the thought of each of the two sentences? According to my theory, that a sentence *has* a sense (in that it implies a way of thinking of the referent), and *expresses* a thought, then (1) and (2) *have* the same sense, but do not *express* the same thought. Perry's example (1977: 711-712), making use of a different demonstrative, the personal pronoun "I", may be even more clarifying:

> "When you and I entertain the sense of "A bear is about to attack me", we behave similarly. We both roll up in a ball and try to be as still as possible. Different thoughts apprehended, same sense entertained, same behaviour. When you and I both apprehend the thought that I am about to be attacked by a bear, we behave differently. I roll up in a ball, you run to get help. Same thought apprehended, different sense entertained, different behaviour."

In the first case, the sense is the same, because when you say "A bear is about to attack me" the way *you* think of the referent of the pronoun "me" is exactly the same with the way in which *I* think of the referent of the pronoun "me" when I say "A bear is about to attack me". The thoughts are different, because they are "apprehended" by different persons, possibly attacked by different bears, in different situations, at different times, etc.

In the second case, the thought is the same, as one and the same person is to be attacked by a certain bear, at a certain point in time, in a certain situation. The sense is different, because the way *I* think of the referent of the pronoun "I" is different from the way in which *you* think of the referent of "I", as the referent of the pronoun is myself, not you.

Perry's discussion (1977: 701) of Frege's example with the personal pronoun "I" also seems to be consistent with this notion of thought:

> "The thought expressed by Lauben when he says "I am wounded" to Leo Peter, cannot be identified with the thought expressed by any nondemonstrative completion of the same incomplete sense in which the singular term refers to Lauben, such as
>
> The man born on the thirteenth of September, 1875, in N.N. is wounded.
>
> The only doctor who lives in the house is wounded.
>
> These express different thoughts, so the thought Lauben expresses with "I am wounded" cannot be identified with *the* thought they both express; there just isn't any such thought."

Perry's theory of self-conscious thought (1977: 710) makes sense now, in spite of Evans's critical analysis:

> "We accept that there is no thought only Hume can apprehend. Yet only he can know that he is Hume. It must not just be the thought that he thinks, but the way that he thinks it, that sets him apart from the rest of us. Only Hume can think a true thought by saying to himself
>
> I am Hume".

The sentence "I am X" is a self-conscious thought when uttered by X, therefore a self-conscious thought is, by no means, a thought only Hume can apprehend. Yet, the sense of "I am Hume" can be entertained only by Hume. What sets him apart from the rest of us is, indeed, not the self-conscious thought, but, as Perry puts it, "the way he thinks it" or, as Evans would say, the way in which he thinks of the referent of the expression "I am Hume".

And it seems that self-locating knowledge ceases to be a problem as well:

> "Self-locating knowledge, then, requires not just the grasping of certain thoughts, but the grasping of them via the senses of certain sentences containing demonstratives." (Perry: 1977: 710).

What Perry means is that self-locating knowledge requires not just apprehending the thought expressed by the sentence: "I am here", which can be apprehended by anyone, anywhere, but doing so while entertaining the sense of the sentence, that is, by thinking of the referent of the sentence "I am here" in the following way:

(a) the referent of "I" is myself

(b) the referent of "here" is the place where the referent of "I", that is myself, is at the moment of utterance.

Thus, by entertaining the sense of "I", Hume thinks of himself, and by entertaining the sense of "here", Hume thinks of that particular place where he is at the moment of utterance.

Going back to our example of

(1) Today is fine. (uttered on 3 March, 2003)

(2) Yesterday was fine. (uttered on 4 March, 2003)

we may say that although the two sentences have the same sense, they express different thoughts, because when one thinks "Today is fine" on 3 March 2003, one must think "Yesterday was fine" on 4 March 2003 in order for the two sentences to have the same sense.

How would this theory look if compared with Frege's philosophy of language? Let's start with Frege's (1956: 15) discussion of the demonstrative "today":

> "If someone wants to say the same today as he expressed yesterday using the word "today", he must replace this word with "yesterday". Although the thought is the same its verbal expression must be different so that the sense, which would otherwise be affected by the differing times of utterance, is readjusted."

My theory holds that when I think "Today is fine" on 3 March 2003, the thought I apprehend is different from the one I apprehend when I think "Yesterday was fine". In other words, different verbal expressions are yielded by different thoughts, but do not yield different senses for the two sentences. This is because the sense is the way in which one thinks of the referent and it is exactly the two different expressions that "readjust" the sense, by making us think of the referent in the same way, and by delivering the same object, in spite of the fact that the conditions of utterance are different.

Thus, Frege seems to believe, like I do, that the sense of "Today is fine" and "Yesterday was fine" is the same, that the use of different verbal expressions serves to "readjust" the sense, and given the idea he holds that a thought is the sense of a sentence, the fragment makes perfect sense:

> "Although the thought is the same its verbal expression must be different so that the sense, which would otherwise be affected by the differing times of utterance, is readjusted." (Frege 1956:15)

The only difference is that Frege's notion of thought is different from what I understand by thought.[1]

What seems to be essential in any theory of indexicals is not what indexicals mean, but the way in which we think of their referent. Similarly, what Davidson (1984: 18) concludes after examining Frege's theory of meaning is that we should

> "rephrase our demand on a satisfactory theory of meaning so as not to suggest that individual words must have meanings at all, in any sense that transcends the fact that they have a systematic effect on the meanings of the sentences in which they occur."

And he goes on to point out that

> "what we wanted, and what we got, is a theory that entails every sentence of the form 't refers to x' where 't' is replaced by a structural description of a singular term, and 'x' is replaced by that term itself. Further, our theory accomplishes this without appeal to any semantical concepts beyond the basic 'refers to'. Finally, the theory clearly suggests an effective procedure for determining, for any singular term in its universe, what that term refers to." (Davidson: 1984: 18-19)

In conclusion, the principle of compositionality is required neither for understanding indexicals, nor for establishing a satisfactory theory of meaning.

[1] As I have pointed out earlier in my essay, my notion of *thought* is similar to what Perry seems to understand by *thought*.

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STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLVIII, 1, 2003

THE FOREIGN LANGUAGE ACADEMIC SEMINAR – A FRAMEWORK FOR DEVELOPING THE EDUCATIONAL PROCESS

RUXANDA LITERAT*

ABSTRACT. This paper describes a framework for training the non-philological students within the foreign language academic seminar. The challenging issues of the specific educational objectives and activity contents are approached from the systemic perspective of the educational act with personal attempts to reconsider the characteristics and functions of the academic seminar.

Introduction

The goals of the higher education, within the ultimate purposes of the general education system in Romania, and which determine the specific educational objectives, are the following:

- assimilation of scientific knowledge and its application to different professions;
- stimulation of theoretical and practical scientific research;
- young people's training for alternative activities capable of ensuring a high professional mobility in order to face the social and market demands;
- development of the efficient self-education capacity aiming at continuous education.

In this context, "the foreign language" as a subject of study has gained a very important role nowadays, the present conditions making it a necessity and even a priority in all speciality domains.

Considering "the foreign language" for non-philological undergraduate students as a higher qualification for their future profession, its subject of study focuses mainly on the specialized language. The development of the students' capacities to inform and communicate in their speciality field within a limited period of time (2 hours per week in the first two years of study) can be made more efficient by creatively applying the findings of the research studies in linguistics, pedagogy and psychology. "From a systemic perspective, the instructive action should be researched *functionally* (purposes, objectives), *structurally* (human and material resources – content, methods, aids, etc. by which it can be carried out),

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and *operationally* (as modality of accomplishment – strategy, stages, assessment, adjustment), all this diversity of variables establishing the conditions and constraints in which the action will occur" (Cerghit, 1980, p.19).

This paper presents a synthesis of the theoretical and experimental study carried out at Cluj Napoca Technical University (Literat, 2000), specifying the *frame-concept* in which the foreign language teaching/learning process takes place with emphasis on the specialized language – the academic seminar – and outlining, in essence, its specific characteristics. The complexity of the educational act made us limit our discussion to the first two main components – objectives and content. The other components – instructional methods and strategies, teaching aids, interactional relations between the agents of the educational process – will form the object of the other paper.

Defining characteristics of the foreign language seminar

As the only organized instructional form, the foreign language seminar has *specific characteristic*s in comparison with the seminars of the other speciality subjects of study.Thus,

- the seminar takes place in a special linguistic environment, i.e. in that particular foreign language;
- the object of study corresponds to the main teaching means – communicating in that particular foreign language;
- in the absence of a course, the seminar includes teaching elements, too;
- the foreign language seminar contributes to the formation of the performant modern specialist interested in reading speciality documentation, communicating in direct contact with foreign specialists and drawing up of management documents.

These characteristics also define *the functions* of the foreign language seminar at the non-philological faculties by specifying the predominant aspect:

- *the informative/instructive function* through the acquisition of new knowledge in the speciality language domain;
- *the formative-methodological function*, which aims at the development of all personality components (cognitive, psychomotor, affective), i.e. the intellectual work skill as a result of the verb actions "to know to discover" , "to know to do/to learn", "to know to act/to create";
- *the communicative-socializing function* in order to determine the growing of the students' capacity in taking linguistic and behaviour decisions suitable to a particular communicative situation;
- *the applied-productive function* in order to develop the students' linguistic performances, and the communicative and attitudinal competences;

- *the control function* in order to check and evaluate the quantity and the value of the knowledge and/or skills, the students' progress and, implicitly, the efficiency of the teacher's activity;
- *the evaluation function* of the students' independent intellectual activity and its results, the conclusions allowing the teacher to control and adjust his future activity;
- *the motivational-stimulative function* in order to develop the cognitive interest, the professional devotion for the integration within multicultural Europe.

Taking into consideration all this, we outline the following possible *types* of the foreign language seminar applied at the Technical University of Cluj-Napoca:

1. *The introductory-orienting seminar* at the beginning of the academic year.
2. *The knowledge and study seminar*, which includes the teaching elements.
3. *The applied-productive seminar* based on *exercises* and *problems* in order to develop linguistic competence, including the *role play* in cases of dialogued expression. The drawing-up of management documents (commercial letters, advertisments, etc.) makes the students familiar with the second aspect of their profession as engineers.
4. *The control and evaluation seminar*, which offers the possibility to establish the students' training level at a certain stage, the degree of knowledge acquisition and the development of their competences and performances – linguistic and communicative.

The educational objectives

The underlying goal of the foreign language learning implies two aspects: (1) the intercultural understanding and (2) the study of the speciality language with a professional purpose for the students.

The educational objectives aim at the development of the communicative competence under its two forms of speech, oral and written, as for example:

- understanding the mass-media messages and information;
- selecting the information from a scientific text and drawing up written message dealing with topics of speciality;
- developing the understanding and the expressing abilities in order to establish the information exchange and maintain the direct or phone communication;
- understanding and knowing certain specific conventions of that language, used in management documents (correspondence, advertisements, telexes, etc.).

The academic seminar takes place on the basis of a *project* which foresees the final result (the product) of certain instructional activities and derives from a retrospective analysis with a prospective content, estimating the difference between the students' formative training at the end of the seminar and their knowledge level at the beginning of the seminar.

The evaluation practice allows the coming back to the previous objectives in order to control if they were achieved *(product evaluation)* and if the teaching aids were suitable to a future use *(process evaluation)*, as well as to examine if the objectives themselves are pertinent *(objectives evaluation).* The systemic model of the seminar design is centered on the students' activity. By a constant analysis of the outcomes as against the objectives set at the beginning (Figure), an adjustment of teacher-student interactions is possible. The linguistic and attitudinal competences are checked through the communicative performances observable at the end of the seminar.

In choosing the objectives we have to consider *the functional language needs* typical of the technical students. The term "functional" refers to the domain called in French "le francais de specialite/le francais instrumental", in recent times "le francais fonctionnel", or better "the functional learning of French" (Vigner, 1980); in English the term used was "English for Special Purposes" turned nowadays into "English for Specific Purposes (ESP)".

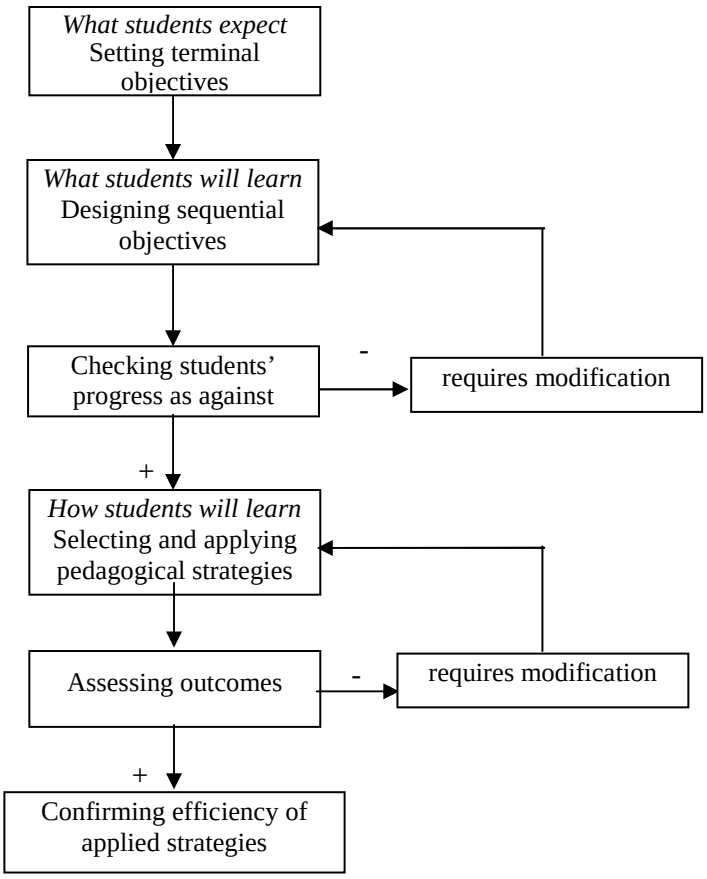

Figure. Systemic model for language seminar design (adapted after F. Tochon)

In the foreign language methodology the notion of "needs" has acquired a special use. It cannot be reduced to the simple predictable use of the language in predetermined communication situations. These needs also relate to verbal and nonverbal behaviour, learning strategies, proper linguistic content, and manipulation, use and generation of content. They are psychological, linguistic and sociological categories (Richterich, 1985, p.107). Students' needs analysis helps us in defining objectives, establishing contents, working out the approach appropriate to the own teaching system, adjusting and readjusting the interactions among the components of the educational system. Needs, as the innermost expression of personality, cannot be dissociated from the individual, existing institutions, society. A need always appears as the result of the individual – environment interaction.

The procedure of identifying the functional language needs is a pedagogical means to take knowledge, decide and adjust the teacher – student interrelations. Defining objectives and identifying needs play a triple role:

- instruments which allow options and decisions;
- make sense of the teacher's and students' actions;
- represent ways of setting up and negotiating the teacher-students interactions concerning various components of the teaching/learning system.

Daniel Hameline establishes four exigencies for which a pedagogical intention deserves to become an *operational* pedagogical *objective*. In order to be operational, a pedagogical intention:

- must enunciate its content in the least equivocal way;
- must describe a student's activity identifiable by an observable behaviour;
- must specify the conditions in which the intended behaviour is supposed to appear (where?, when?, how?);
- must indicate the exigencies level and the evaluation criteria for the learning process. (Hameline, 1986, p.62)

The hierarchy of the operational/specific - terminal objectives aims at approaching the teaching contents according to the principle of globalism, the teleological and aggregativity precepts (Le Moigne, 1984). In organizing the sequences of the operational (cognitive) objectives we should avoid their excessive atomization, and should subordinate the linguistic performances to the global functioning of the content, thus highlighting the pragmatic orientation of the instructional process. Hence, we apply systemic models to the specific and intermediary/terminal objectives (Tochon, 1988), which operate at the *pre-communicative level*, afterwards integrating them contextually into the communication act, which constitutes the *communicative level* (Littlewood, 1991).

The students themselves acknowledge the language seminar as a sequence of stages corresponding to the sequence of objectives. In such circumstances they feel secure in the activity they are carrying out in the class, a state of clarity and finality, reciprocity and complementarities with the teacher. At the same time, they are more confident in themselves in their attempts to express a constructive, creative spirit.

Contents

In designing the seminar, the objectives determine the learning situations (tasks), relying on a *formative content*, approached in a systemic, global and unitary way, too. In establishing the content of the foreign language seminar we should take into account *the cognitive variables*, i.e. the level and degree of the students' mastering of the "previous knowledge" necessary to the systematic study of the foreign language in their speciality, as well as *the emotional variables* – centres of interest.

In working out the content, we should have in view not so much for the logic of the science (the language components linearly presented in traditional sequencing), as for the didactic logic functionally integrating the linguistic components into a communicative context (the teleological aspect). How do we establish the contents? The choosing of the topics/subjects for the speciality texts and/or communicative situation conversations relies on the language teacher's experience, the students' language and communicative needs and their preferences, the syllabi for the speciality subjects of study, and the opinions of the technical teaching staff and professionals.

In their attempts to cope with the great amount of information provided by the languages for specific purposes of all domains, some teachers ignore the tasks concerned with the formation of attitudes, which has a negative influence on shaping the student's personality and training him/her for a "continuous education".

The modern pedagogy of foreign languages in the case of technical faculties is oriented towards the communicative basis formation, the language for specific purposes (LSP) being integrated into the process of the foreign language learning (Kennedy, 1990; Hutchinson, 1991).

An oral/written scientific discourse has a remarkable number of *terms* which form a specific category of the vocabulary. Terminology represents an important stratum, but not a unique one, regarding the lexis of a specialized code. Within the context the terms function among common words and develop, in general, according to the grammatical rules (standards) of the contemporary literary language. The LSP also creates its own subsystems of forming terms and functional grammar, enlarging its semantic and structural limits, and completing them with auxiliary means of the general semiotic system – symbols for expressing notions in a concise form. At present, there is an obvious interaction between the common language and the specialized ones, the penetration into the social common language of a number of technical terms, and the other way round, the maintenance of an important stock of lexical units and structures belonging to the common language, as an expression of the growing possibilities of cognitive comprehension and use of the technical results.

The interrelation common language – language for specific purposes is also achieved in the foreign language teaching/learning process at the technical academic level. In establishing the ratio of the linguistic material – speciality texts and everyday conversation topics – we have considered the factors that include all the teaching/learning conditions specific to that academic institution/faculty: the

specific objectives of that subject matter, the number of the classes allocated, the lexical-grammatical structure of the language, the linguistic and speciality training of the students'group, equipment, etc.

The increase of the informing activities through mass-media in the contemporary society brings new types of message in the communication field: *the advertisements* and *commercials*. They offer information in a brief concise form to business people and any other category of interested persons. For a global presentation of a product/ service, the possible connotations of the semiotic correlatives of language, image and gesture associated in a suggestive way are exploited. In the pedagogical view they represent reduced authentic texts, on the basis of which we can organize creative activities that enrich the students' knowledge and their personal communicative experience.

Conclusions

Modern pedagogy aims at the development of the human personality, capable to innovate and time itself to the social life. Thus, it is essential to revalue the role and management of the foreign language academic seminar.

Centred on the student's sustained activity, the seminar will be going on as an authentic dialogue entailing proposals and interventions, initiatives and adherings to other opinions from the part of both teacher and students.

The seminar design will focus on educational and operational objectives forming a teaching/learning system, which is continuously improving by itself through constant feedback. The objectives set up clearly represent the main component in establishing and accomplishing the other components. Sometimes, not all the objectives can be specified in advance. The teacher should manifest flexibility and freedom to adapt him/herself easily to real unexpected class situations.

Selecting the content matter – subject and language – aims at the students' immediate and future needs. The material we present has to be *relevant* from the scientific point of view, *structuring* the thinking development, and *motivating* to enhance the students' activity and increase efficiency in the instructional process.

The academic seminar not only represents the framework and a means to convey and acquire information and useful communicative techniques for the professional activity, but also dynamism at the level thinking operates with the enhancement of motivations and students' personal capacities.

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THE INDIVIDUALITY AND THE GROUP IN THE NEW PERSPECTIVE OF TEACHING AND LEARNING

RAMONA RĂDUŢ-TACIU

ABSTRACT. The basic idea is that the efficiency of the school microgroups is evidently superior to the individual competencies.

ALG may represent social and educational microsystem that contribute to the development of complex activities during instruction and education. They are built on the basis of some microdivision made by the pupils in the classroom and aim at meeting at least two objectives, namely: learning and pupils' socialisation.

The teacher's role and activity during these lessons and which ALG works consists in:

- choosing the subjects acceptable for group work
- documenting on ALG
- designing the teaching activities, phasing and timing exactly the individual and group activities so that maximum concentration and learning-oriented motivation increase
- direct observation on the way tasks are fulfilled.

I. The teaching and the learning processes from the pupil's perspective

Analizing the process of teaching in schools (from the pupil's perspective) some aspects should be identified/notified:

a) each microgroup of pupils which constitute an internal structure of the class has some specific features.

Usually the pupils from a class are divided into, at least, two groups: one made up by pupils with handicaps who need special attention and another group made up by pupils who are tendowed with extraordinary abilities. General countries have introduced a special programme which is meant to remedy the situation in which the first group mentioned is in. These pupils with special needs are with drawn from the class and form a different group to which a special kind of education must be applied:

b) the teaching/learning process must be individualised and particularised so as to satisfy all pupils needs

c) pupils who encounter face similar problems should form a different group.

II. The implications of the curriculum reform

There are some hypothesis in the curriculum:

a) each pupil may face difficulties in the learning process as well as in the process of integration in a microgroup.

The teacher should take into consideration the difficulties of all the pupils. For example a good pupil may be sometimes bored by the activities the teacher is conducting in the classroom yet the teacher should be concerned when (that pupil refreses several times to comply with the didactic task).

b) these kind of difficulties may suggest ways of making better the process of teaching-learning.

Understanding this process as individualized and particularized the teacher may find out that the difficulties the pupil has in his learning process may be of a psycho-medical kind.

The differences between the pupils in a class may influence their learning abilities. There the teacher must be careful in his teaching process not to create more problems but to avoid the difficulties.

c) the improvements the teachers may bring (in)to the teaching-learning process should help pupils in their learning process.

III. The modernist aspects of the curriculum

The teachers must be able to identify the specific abilities of each pupil and try to organize the process of teaching-learning this in mind. He must encourage the cooperation in the teaching-learning process. Therefore the teacher must have aprevious didactic experience and to meet and share his experience with other teachers. In good schools, the teachers cooperate and share their knowledge, difficulties and experience with the other teachers. This cooperation between teachers may be organized in three ways:

- by assisting at the others class and sharing didactic experience
- by organizing a group of teacher who can help the ones in difficulties by spoting the problems the have.

IV. Cooperation in didactic activity

The classic approach to the learning process implied a hierarchy in the class that is the identification of the best pupils in a short period of time. Thus the class is divided between winners and loosers. There are skill teachers to think up their teaching process in this way. Thus some pupils are not stimulated to participate in the process of learning and the cooperation teachers-class and pupil-pupil not accomplished. That's why a special programme for the pupils who have problems in learning is initiated. They are organized in microgroups which are separated from the rest of the class and to which a special curriculum is applied. Sometimes a teacher trained for this purpose offers his services for this kind of microgroup.

The process of teaching-learning must imply cooperation, a relationship teacher-pupils based on trust and the appropriate consideration of the individuality each pupil. The teacher must include in the process a multitude pf didactic tasks which must be accomplished by the pupils through cooperation. Thus the pupils are confronted with different didactic situations

and are obliged to solve the tasks given to them. In this way they learn obliged so cooperate with the other pupils and are faced with unknown risks. Cooperating means teaching the pupils to be more independent and not to depend on their teachers. This method of cooperation is to be used in a large scale. Yet there are schools where even though the didactic tasks imply working in a team and cooperation the teachers rarely ask the pupils to work in such a way.

In order to succeed in a didactic task which implies cooperation, the teacher must thoroughly prepare the task and supervise the work in class. Thus each teacher must consider some questions before organizing his activities:

a) Why must the pupils help one another even when learning?
b) Why must they be interested in what their colleges are doing?
c) How can we reduce the enthusiasm of the best pupils in affirmating their knowledge in order not to monopolise the whole discussion?
d) How can weaker pupils involve themselves in the process of learning?
e) How can a teacher organize the activity in a microgroup in such a way to involve all the students?
f) What kind of didactic strategies must be used?
g) How can other teachers be involved in this process of using cooperative strategies in class?

The core idea is for the pupils to realize they must work with the others, depending on the others meaning also proving your own individuality-pozitive interdependence. This process can be defined as:

- a grouping of the pupils in microgroups which have different easy tasks
- in each group (ALG=group autonomous learning) each members has a certain role (president, secretary, etc.)
- each member of the group is asked to make a scheme which solves the task and then share with the rest of group
- each ALG would be awarded a score which is the sun of the scores received by each member of that group who solves the tasks.

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STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLVIII, 1, 2003

USING PROJECTS AS HOMEWORK: A DIFFERENT KIND OF ASSESSMENT

BIANCA BRETAN

SOMMARIO. L'articolo "L'utilizzazione dei progetti come compito: un'altro tipo di valutazione" vuole sottolineare l'importanza che questo tipo d'attività. ha nel motivare l'allievi ad usare l'inglese fuori dalla classe. L'articolo si riferise anche alle varie tappe di un tale progetto ed ai modi di compierlo. È importante a cominciare questo tipo d'attività anche dalla scuola elementare per solere gli allievi a lavorare insieme ed a utilizzare l'inglese senza la sorvelianza continua di un professore. I progetti sono forse uno dei migliori modi per motivare gli studenti a lavorare di più perchè loro coinvolgono, a parte dall'utilizzazione della lingua, la ricerca dell'informazioni dai diversi campi d'attività.

One of the main concerns of any teacher is to motivate students make use of the knowledge previously acquired in the classroom after they leave the school building. Extensive reading and homework are two of the most popular ways of reaching this objective. Though, we should question their efficiency in all situations. In both cases, the efficiency could be measured by the degree of motivation they involve.

In the case of homework there is an extrinsic motivation, most students regarding home done exercises more as an obligation that implies punishment if unfulfiled, rather than a further oportunity for individual study and development of their target language.

In the case of extensive reading there is a lack of obligation (at least in the case of English language classes) for students to do it, so we have an intrinsic motivation, based on the genuine need of the student to widen his knowledge. The problem here consists in the fact that the percentage of those who are implied in this kind of activity is rather low, TV programs and the Internet representing serious competitors to books.

Keeping in mind the idea that learning shouldn't stop when classes are over and acknowledging that motivation is the most important component of supplementary work, teachers of English can use projects in order to encourage the use of the target language. Using projects, teachers should be aware of at least two of the main gains of this kind of activity: team work, creative writing and the development of a positive attitude towards learning.

According to David A. Hill (Hill: 1999), projects have four main characteristics:

1. projects are student centered: the topic of the project can be chosen by the teacher together with her students, according to their interests, age, level etc;
2. projects focus on one main topic: this topic involves the already known vocabulary, which is used in this situation as a natural way of expressing personal attitudes and beliefs;
3. projects are integrating language work with other subjects: knowledge from other subjects is integrated to the main topic, this way students can collect information obtained from various sources;
4. all projects have an educational purpose: through them students learn important things and receive meaningful information on the surrounding world, using the target language as a means for communication.

There are some different stages that need to be pursued in order to fulfil a project.

The first step is the **choice of the topic**. At this point, it is important to take into consideration the age group of the students, because an inappropriate topic will lower their motivation. The teacher can pick a topic herself the first two times, trying then to involve her students in the process of decision. Brainstorming would be a good idea, followed by a negotiation stage in which students will agree on the final choice with their classmates.

The next step is **discussing the contents of the project**. In order to decide on this issue, students will be invited to express their opinions. This way, everyone could be a resource. The teacher's role is that of contents organizer, writing the ideas expressed on the board starting from the original topic. Also, she directs students to use already known language structures in order to get a meaningful practice. Using a video documentary or reading an article from a magazine could be two ways of focusing the students' attention and interest on the contents and on their future work. At this stage, the class should agree on the types of media resources that are going to be used during the presentation (books, magazines, video, the Internet). It is important to set from the very beginning teacher's expectations regarding the final form of the project.

After all aspects related to contents are clarified, the focus shifts to the next step, **work organization**. During this stage the teams are established and the project deadline. Students from each team agree on how they will share work and divide responsibilities. The teacher acts here as a resource person, offering help if it is needed, advice and guidance. She should be able to give them a hand to clarify their ideas or to point out errors in rough drafts.

Another important aspect of this kind of assessment is **evaluation**. The emphasis is not on marking individual work but in the collective appreciation of the teamwork. At the end of many hours of hard work, students are delighted to see their

final product exhibited in front of the classroom, in recognition of their effort. It is extremely motivating for the children to see their projects in the form of posters on the walls and they feel even prouder if these are also shown to their parents.

It is not better place for the introduction of project work than the primary classroom. Children always enjoy diversity in teaching and the integration of language work with other subjects will only rise their interest in learning.

Textbooks designed for this level include many project proposals of different types.

One category of projects are those intended to combine knowledge from different subjects. For example, in the second grade "Splash!" coursebook there is a lesson, "Pompeii", about the famous Roman town. Having this presentation in mind, the young students can work on a group project about a famous monument in our country. This means that they will be able to transfer information from one subject to another, linking language use with association. In the third grade "Splash!" there is "A project about volcanoes", a lesson that explains facts about volcanoes and gives an inside look into the mechanism of eruption. Students' task is to research about famous active volcanoes in the world. The information acquired will be very helpful in a Geography lesson.

The other category of projects concerns the practice of grammar and vocabulary structures. The fourth grade "Splash!" textbook includes the project "Make your own class magazine", where the students have to interview their colleagues or parents on different topics, write some jokes or write about unusual hobbies. The aim of the activity is the development of writing and speaking skills in a creative manner. The second project in the same textbook is "Desert Island Discs". During this activity students are asked to prepare a radio broadcast in the form of interviews with different classmates about their favorite music. The aim here is practising the interrogative Present Simple using the target language.

From all the above-mentioned aspects we can draw some conclusions regarding the usefulness of projects. First of all they are a resourceful way of motivating students. The motivational factor consists in the integrative perspective that this kind of activity offers at the level of information research (they have to combine knowledge from different fields) and at the level of using multimedia (this way students watch TV or surf the net with an educational purpose).

Secondly, this is an activity that definitely encourages cooperation and teamwork, developing social skills such as debating, negotiating and reaching a conclusion.

The final benefit is, though, at the level of language acquisition. Working at a project means using the four skills (listening, reading, writing, speaking) in the process, an aim that few activities can achieve.

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ZUR GESCHICHTE DES RUMÄNISCHEN UNTERRICHTSWESENS. VON DEN ANFÄNGEN BIS 1918

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ABSTRACT. The article **"*The History of the Rumanian Educational System from the Beginnings to 1918*"** presents the chronology of school teaching in all the Rumanian provinces. The analysis of the Rumanian educational system concernes several main directions:

- Until 1959 the provinces Transylvania, Moldavia and Valachia, also the Banat and Bucovina;
- Until 1918 there are 4 directions to be analyzed: Transylvania, Rumanian Kingdom, Banat and Bucovina;
- Between 1919-1940 the analysis focuses on the singular educational system of Rumania;
- Between 1940-1945 there are two systems: North Transylvania and Rumania;
- Starting from 1945 we have one Rumanian educational system.

The first part of my research is concerned with the beginnings of the educational system and its development until 1859. The second part is focused on the years between 1860 – 1918.

Die Entwicklung des Unterrichtswesens in Rumänien muss man auf verschiedene Schienen beobachten und analysieren:

- bis 1859 die 3 Fürstentümer Siebenbürgen, Moldau und Walachei und die Provinzen Banat und Bukowina meist getrennt,
- bis 1918 hat man 4 Einheiten: Siebenbürgen, Königreich Rumänien, Banat und Bukowina
- zwischen 1918-1940 hat man ein Unterrichtssystem [1]
- zwischen 1940-1945 2 Systeme: Nordsiebenbürgen und Rumänien
- ab 1945 Rumänien

1. Bis zur Vereinigung Moldaus mit der Walachei - 1859

1.1. Moldau und Walachei zwischen dem 15. und 17. Jh.

Die rumänische Schule machte folgende 3 Etappen in ihrer Entwicklung durch:

1. religiöse Schulen, mit Altslawisch als Unterrichtssprache
2. gemischte Schule, mit religiös-weltlichem Charakter, mit Altslawisch oder Altgriechisch als Unterrichtssprache
3. weltliche Schule, in rumänischer Sprache

[1] 1940 - Zweiter Wiener Schiedsspruch, mit Abgabe von Nordsiebenbürgen an Ungarn.

Die Einrichtungen wodurch die Gesellschaft die eigenen kulturellen Werte weitergegeben hatte, waren die Schule und die Bücher, sowohl Manuskripte als auch Druckschriften. Über Schulen hat man geschriebene Dokumente nur seit dem 15. Jh. Deswegen kann es möglich sein, dass in den ersten Jahrzehnten des Bestehens der rumänischen Fürstentümer die intellektuelle Ausbildung von Mönchen und Priestern in den Klöstern bewerkstelligt wurde. [2]

Die Klosterschulen hatten in den 15. - 16. Jh. eine besondere Rolle; die bedeutendsten waren in Neamt und Putna in der Moldau und in Scheii Brasovului in Siebenbürgen zu finden. Die Gründung der Klosterschulen wurden aus der Notwendigkeit gegründet, Schulungsmöglichkeit bestimmter gesellschaftlichen Schichten zu geben[3]. Hier unterrichtete man die notwendigen Kenntnisse für das religiöse Leben in Altslawisch. Um aber diese Schulen finanziell zu unterstützen wurden hier nicht nur künftige Priester, Mönche, Kaligraphen oder Maler erzogen, sondern auch künftige Fürsten, Bojarensöhne und Schreiber für die fürstlichen Höfe.

Die Schulen mögen, wie auch sonst wo, in erster Linie Kirchenschulen gewesen sein; doch ist das Bestehen von weltlichen Schulen, die ähnlich den deutschen Winkelschulen gewirkt haben werden, nicht von vornherein zu verneinen.

Ein rasches Emporblühen des Schulwesens in dieser Zeit wurde nicht durch die unruhigen Zeiten selbst verhindert, sondern auch durch den Umstand, dass die Söhne der führenden Schichten ihre Ausbildung im Ausland suchten. So gibt es u.a. 1401 in Krakau eine Burse, die ausdrücklich auch für Moldauer bestimmt war. [Brandsch 1926 S. 3]

Es wurden aber auch städtische Schulen oder von den Fürsten gegründet. Für Studien auf höherem Niveau wurden die Söhne der Moldauer und der in der Moldau lebenden Ausländer an die Universitäten in Krakau und Wien geschickt, wo bis 1504 18 Studenten aus Baia, Suceava, Jassy und Siret immatrikuliert wurden. [4]

Zwischen 1561-63 gründete Despot Voda ein Kollegium in Cotnari, wo er deutsche Lehrkräfte rief und dessen Lehrplan von der Reformation beeinflusst war. Dieses Kollegium konnte nicht lange bestehen, es wurde deswegen in eine Lateinschule mit jesuitischen Lehrern, danach in einer Schreiberschule umorganisiert. Die Jesuiten führten auch in Jassy ein Gymnasium, wo sowohl Kinder von Bojaren als auch Kinder der Mittelschicht zwischen dem Ende des 15. Jh. bis Anfang des 18. Jh. gelernt hatten.

Charakteristisch für den Unterricht in die Rumänischen Fürstentümer des 17. Jh. war die Entwicklung von Schulen in den Hauptstädten und anderen grösseren Städten. Mittelschulen waren in Bukarest, Campu-Lung (Walachei) und Jassy (Moldau) zu finden.

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[2] Siehe dazu V. Georgescu, 76.
[3] Siehe dazu N. Iorga, 96
[4] Siehe mehr dazu in V. Georgescu, 76.

1.2. Siebenbürgen bis zum 18. Jh.

Der Schulunterricht war den Konfessionen unterlegen. Bis zur Regierung Maria Theresia, Kaiserin Österreichs zwischen 1740 und 1780, hat man mehrere Mittelschulen neben den katholischen Klöstern gegründet. Hier unterrichtete man "*septem artes liberales*": Grammatik, Rhetorik und Dialektik – "*trivium*" – und Arithmetik, Geometrie, Musik und Astronomie – "quadrivium", alles in lateinischer Sprache, während der Hauptinhalt der Instruktion aus dem religiösen Unterricht bestand.

Nach der Reformation gründete man in den bedeutendsten Städten auch reformierte Schulen. Das Wettbewerb zwischen den 2 Konfessionen führte zur Errichtung vieler konfessionellen Schulen: im 15. Jh. gab es in Siebenbürgen 1 römisch-katholisches Gymnasium, im 17. Jh. gründet die reformierte Konfession 8 Gymnasien, besonders in den sächsischen Städten. Infolge der Gegenreformation Nikolaus Olahus wuchs auch die Anzahl der katholischen Gymnasien. Wir können beobachten, dass in fast allen siebenbürgischen Städten während des 17. Jh. Gymnasien und/oder Mittelschulen gegründet wurden.

Als eine Reaktion gegen das jesuitische Unterrichtswesen gründete der calvinistische Prinz Gabriel Bethlen 1644 ein akademisches Gymnasium in Alba Iulia, dass 3 Fakultäten beherbergte: Philosophie, Literatur und Theologie. Mit grossem Geldaufwand brachte der Gründer besonders begabte Lehrkräfte nach Alba Iulia: den deutschen Philosophen Alstedius, den deutschen Philologen und Dichter Martin Opitz, den Naturwissenschaftler Bisterfeld u.a. Diesen schliesst sich der Kartesianer Apaczai Csere Janos. Im Lehrplan des Gymnasiums kann man die Ideen des Pädagogen Jan Komenski (Comenius) erkennen, der einen Unterricht in der Muttersprache forderte.

Folgende Bezeugung einer rumänischen Schule aus dem Jahre 1657 ist aufschlussreich. Errichtet von der Fürstin Susanna Lorantffi, die Witwe Georg Rakoczi I. in Fogarasch, um hier rumänische Geistlichen und Lehrern für die Altgegend auszubilden.

Das Regulament dieser Schule gibt uns wertvolle Aufschlüsse über das Schulwesen in dieser Gegend. Es scheint, dass es damals hier eine ganze Reihe von rumänischen Dorfschulen gegeben hat, deren Lehrer verpflichtet waren, die in Fogarasch eingerichteten Kurse zu besuchen, wenn sie nicht ihr Lehrerrechtes verlustig gehen und wieder hörige werden wollten. In der Schule in Fogarasch selbst wurde Singen, Schreiben und Lesen (mit rumänischen Buchstaben und in rumänischer Sprache) gelehrt. Aufgenommen wurden in diese Schule nicht nur Bojaren- und Pfarrersöhne, sondern auch Söhne von Bauern. Mit der Schule war auch ein Internat verbunden, in das die ärmsten und verdientesten Schüler aufgenommen, und hier zum Teil kostenlos erhalten wurden. Die Ausgezeichnetesten des rumänischen Kurses wurden auch zu dem höhern Kurs, in dem sie lateinisch lernten, zugelassen. Niemand aber sollte als Lehrer in ein rumänisches Dorf geschickt werden, bis er nicht gut rumänisch lesen und schreiben, bis er nicht singen und den Katechismus gelernt, über den gewöhnlich auch eine Prüfung abgelegt werden musste. [Brandsch 1926 S. 5]

Den Bestimmungen der deutschen Kirchenordnung[5] in Siebenbürgen entsprechend wurde das Schulwesen in Stadt und Land neu organisiert, ebenso die Armen- und Krankenfürsorge. Sächsische Absolventen der Gymnasien wurden nun mit Stipendien auf protestantische Universitäten in Deutschland geschickt, der über Jahrhunderte in Handwerk, Handel und Bildung gepflegte Kontakt zum "Mutterland" wurde im Bereich des Hochschulbesuchs sozusagen institutionalisiert. In Kirche und Schule wurde nunmehr Deutsch gesprochen und das Augsburger Bekenntnis hochgehalten, während die Ungarn und Szekler reformiert, unitarisch oder katholisch waren und die Rumänen griechisch-orthodox blieben.

Aus dem Ringen zwischen Habsburgern und Osmanen ging am Ende des 17. Jahrhunderts – nach Abwehr der türkischen Belagerung von Wien (1683) und nach mehrjährigen Kämpfen unter Feldherren wie Herzog Karl von Lothringen, Markgraf Ludwig von Baden und Prinz Eugen von Savoyen– eine neue, abendländisch orientierte Grossmacht in Mittel- und Südosteuropa hervor, die habsburgische Donaumonarchie. [Gündisch S.7]

Die mittelalterliche Anschauung wurde langsam in diesen Schulen von einer moderneren ersetzt. Diese neue Anschauung, eine Verschmelzung zwischen Humanismus und Kartesianismus können wir auch in der Schule in Orastie (Bros) wieder erkennen, vom rumänischen Gelehrten Mihai Halici gegründet. In dieser Schule wurde Rhetorik, Grammatik, Logik, Psychologie, Metaphysik, Geschichte, Algebra, usw. unterrichtet.

1.3. Moldau und Walachei im 17. Jh.

Eine universitäre Einrichtung wurde in Târgovişte mit Unterstützung des Fürsten Matei Basarab und dank der Mitarbeit der Bojaren Udrişte Năsturel und Constantin Cantacuzino gegründet. Unterrichtet wurden hier Altgriechisch und Latein von Gelehrten aus Konstantinopel.

In derselben Zeit wurden auch in den anderen zwei rumänischen Fürstentümern universitäre Einrichtungen gegründet. Gegen Ende des 17. Jh. begann der Unterricht wieder seinen Weg zu bahnen. Besonders in der Walachei fand es einen besonderen Aufschwung, nach der Einrichtung der Schule *Sfântu Sava*, 1680 von

[5] Das hängt mit der kirchlichen Erneuerung bei den Siebenbürger Sachsen in den vierziger Jahren des 16. Jahrhunderts zusammen. Ein Kronstädter Ratsherr namens Johannes Honterus, der in Wien studiert und sich in Krakau und Basel als Buchdrucker und Humanist betätigt hatte, betrieb sie im geistig-geistlichen Bereich im Sinne Martin Luthers und verfasste ein Reformationsbüchlein, das der Hermannstädter Bürgermeister Peter Haller nach einer gewissen Umarbeitung als *"Kirchenordnung aller Deutschen in Sybenbürgen"* drucken liess und im weltlich-politischen Bereich durchsetzte. 1550 beschloss die Nationsuniversität, diese Kirchenordnung in allen Städten und Gemeinden des Sachsenlandes einzuführen. Damit schufen sich die Siebenbürger Sachsen eine sog. geistliche Universität, eine Volkskirche, der im Laufe der Zeit auch wichtige weltliche Aufgaben in diesem christlich geprägten Genossenschaftswesen zufallen sollten, die *"ecclesia Dei nationis Saxonica"* (die Kirche Gottes der sächsischen Nation). [Gündisch 7]

Şerban Cantacuzino gegründet und durch Constatin Brâncoveanu (1688-1714) und dem Bojaren Constantin Cantacuzino zur *Fürstlichen Akademie* modernisiert, eine Institution zwischen Gymnasium und Kollegium, wo bedeutende Lehrer des christlichen Morgenlandes eingeladen wurden, um Philosophie, Naturwissenschaften, klassische Literatur u.a. zu unterrichten.[6] Diese Schule wurde sehr schnell zur bedeutendsten Unterrichtseinrichtung für die Rumänen der 3 Fürstentümer, aber auch für die jungen Leute der Balkanischen Halbinsel, ein Zentrum der klassischen Kultur. Die Unterrichtssprache dieser Schulen und Akademien war anfangs Altslawisch, danach Altgriechisch.

Von Anfang an war das Studium gebührenfrei und für alle offen, sodass Jugendliche aller Gesellschaftsschichten Zugang hatten. Die meisten Studierenden waren Söhne von Handwerkern, Händlern und verarmte Bojaren, da die reichen Adligen ihre Kinder zuhause, mithilfe Privatlehrern unterrichten liessen oder diese ins Ausland zu berühmten Universitäten, besonders nach Padua oder gar Paris zum Studium schickten. Radu Cantacuzino lernte um 1700 an der Pariser Universität, der erste rumänische Student an einer französischen Universität. Seit ihrer Gründung wurden die ausländischen Akademien von zahlreichen balkanischen Studenten besucht, und wurden ein gleichberechtigtes Studiumsziel, wie die Schule der Patriarchie in Konstantinopel, eine der Hauptzentren des morgenländischen Unterrichts.

Langsam wuchs auch die politische und gesellschaftliche Bedeutung der Fremdsprachen. Während seiner 4. Regierungszeit (1744-1748) bestimmte der Fürst Constantin Mavrocordat, dass kein Bojar eine öffentliche Stelle an seinem Hof erhalten würde, wenn er Griechisch nicht könne. Er ordnete auch für die Fürstliche Akademie Sf. Sava Neuerungen an: ausser Rumänisch wurde hier des Weiteren sowohl Italienisch als auch Türkisch unterrichtet. Um den Kontakt mit dem Abendland zu unterstützen schickte der Fürst 12 Stipendiaten an der Venediger Universität, die er später am Hof beschäftigte.

1776 verfügte der Fürst Alexandru Ipsilanti 1776 urkundlich, dass die Anzahl der Lehrer an der Sfântu-Sava-Akademie zu 9 erhöht werden solle, davon sollten drei Lehrer Fremdsprachen unterrichten: Latein, Französisch und Italienisch. Dadurch wurde die Bukarester Akademie die fortschrittlichste unter den Schulen in der Walachei und Moldau. Auch die Schulstufen wurden klar bestimmt: Grundschule, Gymnasium, Obergymnasium und Hochschule. In derselben Urkunde wurde festgelegt, dass Absolventen der Provinzschulen ihr Studium an der Bukarester Akademie fortsetzen können. [7]

Und doch setzte sich die rumänische Schule durch, auch wenn sie viele Schwierigkeiten bekämpfen musste. Der rumänische Elementarunterricht der Zeit setzte sich aus Lesen, Schreiben, Rechnen und kirchlichen Gesängen zusammen.

[6] Siehe dazu V. Georgescu 78.
[7] Siehe dazu Nes, 20 und V. Georgescu, 95f.

Die Schulen standen unter der Aufsicht des Metropoliten und der Bischöfe. Da es an eigenen Schulgebäuden fehlte, wurde der Unterricht in der Kirche oder in den Wohnungen der Priester und Lehrer abgehalten

Die ausländischen Reisenden durch die rumänischen Fürstentümer bezeugten Mitte des 17. Jh. 20 Schulen in Jassy.[8] In der Moldau gründete Vasile Lupu mit Hilfe des Kiewschen Metropoliten Petru Movilă 1640 eine Akademie, die seinen Namen trug. Organisiert nach dem Beispiel der Kiewer Akademie, wurden hier Latein, Slawisch, Griechisch, Rhetorik, Philosophie und Poetik unterrichtet. Eine der ersten bedeutenden weltlich-religiösen Einrichtungen der Moldau war *Şcoala de la Trei Ierarchi*, 1644 vom Fürsten Vasile Lupu gegründet.

Die Fürstliche Akademie wurde in Jassy 1701 von Antioh Cantemir wieder gegründet (in Nachfolge der Akademie des Vasile Lupu) und 1714 von Nicolae Mavrocordat umorganisiert. Laut Kommentare der Zeitzeugen können wir feststellen, dass hier 4 Lehrer verschiedenen Sprachen unterrichteten: Altgriechisch, Altslawisch, Neugriechisch und Rumänisch; dadurch können wir behaupten, dass diese die erste Schule war, die auch Rumänisch als Unterrichtsfach hatte.[9]

Der Fürst Grigore Ghica hatte sich einen besonderen Namen durch seine schulfreundliche Tätigkeit gemacht. Bald nach seiner Thronbesteigung errichtete er in Jassy eine Schule und versuchte in seiner Urkunde von 1736 das Schulwesen zu regeln. 1747 kam er mit einer neuen Urkunde auf das Schulwesen zurück:

Er beginnt mit einem Loblied auf den Wert der Schulen, erwähnt, dass durch die Sorglosigkeit der Fürsten, die sich entwöhnt hätten, für die Erhaltung der Schulen zu sorgen, die Unwissenheit überhand genommen, da die Mächtigen, die wohl für ihre Kinder Lehrer gehalten, auf diese Weise doch nicht hätte verhindern können, dass die meisten ungebildet blieben; die grosse Menge aber befinde sich vollständig des Schmuckes der Belehrung geraubt. Da die Schulen aber wie eine Quelle seien, aus der das Volk Unterricht und Einsicht schöpfe, welcher Unterricht jeden Menschen befähige, die Gottheit zu erkennen, die rechtgläubige Religion zu verstehen, welcher Unterricht die Menschen weiterhin mit Schönheit der Rede ausbilde und zu praktischer Redefähigkeit bringe und sie würdig mache, kluge Pfarrer und gelehrte Lehrer zu werden, von denen viel Nutzen sowohl für die Kirche als auch für das Gemeinwesen ausgehe, wolle sich der Fürst den Schulen annehmen. [Brandsch 1928, 7]

1748 wurden urkundlich vom Fürsten Ghica eine Reihe von Schulen in mehreren Ortschaften Moldaus gegründet: 4 Schulen in Jassy, andere Schulen in Roman, Radauti und Husi. 1792 findet unter dem Fürsten Alexandru Moruzi eine Reform des Unterrichtswesens in der Moldau statt. Auch die Fürstliche Akademie in Jassy wird umorganisiert: hier werden als Neuerungen Mathematik, Geometrie

[8] Mehr dazu in V. Georgescu 77]
[9] V. Georgescu 98f, Iorga 67.

und Rechtswissenschaft eingeführt. Die Unterrichtssprache ist Neugriechisch, aber es kommen auch Lehrer, die in französischer und rumänischer Sprache die Geometrie unterrichten.

Im wesentlichen aber hing Blühen und Gedeihen der Schulen davon ab, ob die Fürsten für Schulfragen das richtige Verständnis aufzubringen vermochten, und ob die Metropoliten ihre diesbezüglichen Pflichten erkannten und erfüllten. [Brandsch 1926, 7]

1.4. Siebenbürgen im 18.Jh.

1688 wurde Siebenbürgen zu einer Provinz des Habsburgischen Kaiserreichs. Das politische und rechtliche Statut Siebenbürgens wurde am 4. Dezember 1691 durch den Leopoldinischen Freibrief festgelegt, das weitere 150 Jahre als Grundgesetz für Siebenbürgen fungierte. Hier wurde folgendes festgelegt: als erstes wurden die vier Religionen (katholische, reformierte, lutherische und unitarische Religion) anerkannt; die Diät, die anderen Verwaltungs- und Rechtsinstitutionen sowie die Privilegien der Ungarn, Szekler und Sachsen wurden beibehalten; alle Stellen wurden von Ungarn, Szekler und Sachsen besetzt; der Befehlshaber der Armee war ein Deutscher. Die Schlüsselpositionen wurden unter der Autorität des Kaisers oder der Aulischen Siebenbürgischen Kanzlei in Wien gestellt. Siebenbürgen behielt seine interne Autonomie, mit eigener Regierung und Diät und wurde 1768 zum Groțssfürstentum. [Costantinescu / Daicoviciu / Pascu 234]

Die Vereinigung im Jahre 1701 erweckte wieder die Gefühle, die lange Zeit eingeschlafen waren und knüpfte über Jahrhunderte das band einer Kultur, die mit der der alten Römern begann. Auf dieser Weise erklärt es sich, warum die ersten rumänischen Schulen unter der Ägide der rumänisch-uniierten (griechisch-katholischen) Kirche gegründet wurden; so entstand das Gymnasium in Blaj (Blasendorf) im Jahre 1754 und das in Beiusch im Jahre 1828. [Kiritescu 446]

1775 wurde auch die Bukowina Teil des Habsburgischen Reichs. Das Banat wurde 1718, nach dem Passarowitzer Frieden, Teil des Habsburger Kaiserreichs. Sowohl das Banat als auch die Bukowina waren als Kronbesitztümer organisiert..[10]

Die Umorganisierung Siebenbürgens als habsburgische Provinz änderte die gesellschaftlichen und politischen Verhältnisse. Der habsburgische Zentralismus hatte man in Siebenbürgen besonders in der Regierungszeit Joseph II. gespürt, als dieser die Unterschiede zwischen den Provinzen streichen wollte, um einen aus Wien gesteuerter zentralisierter Staat entwickeln können.

"Um 1784-1787 können laut österreichischen Statistiken 63% Rumänen, 24,1% Ungarn, 12,4 Sachsen und Schwaben aus 2.489.147 Bewohner Siebenbürgens (zusammen mit dem Banat, der Crisana und dem Maramures) gezählt werden." [Georgescu 108[11]]

[10] Siehe mehr dazu in Costantinescu / Daicoviciu / Pascu 234 f
[11] Eigene Übersetzung

Joseph II. führte im Habsburger Kaiserreich eine Reihe von aufklärerischen Reformen ein, die ihre Auswirkung auf Siebenbürgen streckten. Er entfernte die Autorität der Kirche von der Zensur und überreichte diese einer liberaleren Kommission, die die Bücher revidierte; eine bestimmte Anzahl Mönchsorden wurden abgeschafft und deren Vermögen säkularisiert. Die Verwaltung des Grossfürstentums Siebenbürgen wurde neu organisiert, indem 11 Komitate errichtet wurden; die öffentliche Sprache Latein (bis 1784 auch Unterrichtssprache) wurde durch Deutsch ersetzt; die Leibeigenen wurden frei geschrieben, und erhielten unter anderem das Recht zur Schule zu gehen. Joseph II. hat aber alle seine Reformen vor seinem Tode 1790 widerrufen.

Der Unterricht in Siebenbürgen hatte fast babylonischen Charakter: manchmal unterrichtete man in derselben Schule in den Sprachen – Latein, Ungarisch und Deutsch – nach der momentanen Willkür des Lehrers. Rumänisch, obwohl die am meist verbreiteten Sprache in Siebenbürgen, wurde im Unterricht nie benutzt.

Der Unterricht in Siebenbürgen war den politischen Interessen des Staates unterworfen, da dem "aufgeklärten Absolutismus" zufolge, die Schule erstens ein politisches Anliegen war. Die Organisierung des Unterrichts hatte als Grundlage die Gesetze *Ratio educationis I* (1777)[12], *Norma Regia* (1781) und *Ratio educationis II* (1806)[13] wodurch die Schule unter staatlicher Kontrolle gesetzt und im Lehrplan eine wachsende Bedeutung den Naturwissenschaften geschenkt wurde. Anhand der oben angeführten Gesetze wurde 1780 in Grosswardein eine Akademie gegründet, die 1788 auch eine Jurafakultät beherbergte. Zur Ausbildung von Juristen wurden juristische Akademien in Hermannstadt und Klausenburg gegründet, während zur Ausbildung von Chirurgen 1775 in Klausenburg ein Chirurgieinstitut errichtet wurde.

Die Lage des Unterrichts in Siebenbürgen war nicht besser als in den anderen zwei rumänischen Fürstentümern, trotz der aufklärerischen Tätigkeit der Gelehrten. Sowohl die Anzahl der Schulen als auch die der Lehrer war aber beträchtlicher als in den anderen zwei Fürstentümern. Das Bedürfnis der Erziehung treuer habsburgischen Bürger erklärte die Einrichtung zahlreicher Dorfschulen, besonders im Banat, dass Kronbesitz war, und in den Grenzgebieten Für die Notwendigkeiten des Bergbaus wurden Bergbauschulen errichtet. Rumänische Schulen gab es schon in Blasendorf (1754), Kronstadt (1829), Beius (1829) und Arad. In Blasendorf (1754) und Hermannstadt (1811) wurden orthodoxe Seminare zur Ausbildung von Priestern, ein paar Jahre später eine ähnliche Einrichtung in Arad (1822) gegründet.

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[12] Dadurch wurde der Sekundärunterricht geregelt: es wurden 3 Schulniveaus festgelegt: 3 Jahre Grammatikunterricht, 2 Jahre Gymnasium, 2 Jahre Philosophie. Der Hauptteil des Unterrichts bestand aus der lateinischen Sprache und der lateinischen Literatur. Es wurde auch der Unterricht zur Vorbereitung von Lehrern und Priestern eingeführt.

[13] Die Vorschriften der ersten *Ratio* wurden teilweise verändert. Die Schulniveaus bleiben immer noch 3, aber 8 Jahre lang: 4 Jahre Grammatik, 2 Jahre humanistische Fächer, 2 Jahre Philosophie.

"Aus den Statistiken des österreichischen Generals Bukow, der 1761 eine Volkszählung in Siebenbürgen durchführte, ergibt sich die Anzahl von 2719 rumänischen Lehrern und 2858 Priestern in Siebenbürgen". [Georgescu 136]

Bis zum Ende des 18. Jh. wurden zahlreiche Schulen gegründet: In der Moldau und der Walachei wurden in allen Kreissitzen Schulen gegründet, während in Siebenbürgen zahlreiche katholische Gymnasien in den Städten und Allgemeinschulen in den Dörfern der Grenzregimenten[14] [15]und in den Bergbaugebieten gegründet wurden.[16]

Das Bewusstsein der romanischen Abstammung des rumänischen Volkes, das durch die Siebenbürger Schule propagiert und bestärkt wurde, schuf enge Verbindungen mit dem kulturellen Leben der Fürstentümer jenseits der Karpathen. Siebenbürger Professoren überschritten das Gebirge, erweckten in den Fürstentümern in der Zeit der kulturellen Renaissance das Bewusstsein des Romanismus und gaben der rumänischen Schule eine Fülle auserlesener Lehrer und Organisatoren. Namen wie Lazăr, Laurian, Ioan Maiorescu und andere repräsentieren den entscheidenden Einfluss Siebenbürgens auf die Entwicklung der Schule in den freien Fürstentümern. Bei der Gründung der rumänischen Akademie war die Beteiligung Siebenbürgen ganz besonders wertvoll. Die Universitäten in Bukarest und Jassy, sowie Gymnasien, zählten unter ihren Lehrkräften an erster Stelle Siebenbürger; vor allem waren es Professoren der lateinischen und deutschen Sprache und der Geschichte. Auf dem Gebiete der Pädagogik hatten die Professoren aus Siebenbürgen das Verdienst, die Bedeutung der Pädagogik Herbarts erkannt und sie zuerst in den Schulen Siebenbürgens angewendet und dann an die Lehrerbildungsanstalten des alten Königreichs verpflanzt zu haben. Das ständige Anströmen aus Siebenbürgen in das alte Königreich hatte auch das Resultat, in praktischer Weise die Verbindung zwischen deutscher und rumänischer Schule durchgeführt zu haben. [Kiritescu 446f]

1.5. Der universitäre Unterricht bis zum 19. Jh. in den 3 Fürstentümern

An der Universität Klausenburg, 1698 neu organisiert unter der Schirmherrschaft der Jesuiten, wurden meistens Theologie und Rhetorik unterrichtet, während die Naturwissenschaften als Mittel zur Widerlegung der progressiven Ideen benützt wurden. Gegen den jesuitischen Unterricht reagierten rumänische, sächsische und ungarische Gelehrten.

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[14] Nasaud, Fogarasch, Hunedoara, Hermannstadt – je 2 rumänische Regimente, Ostsiebenbürgen - 3 szeklerische Regimente, Banat - 1 rumänischer und ein schwäbischer Regiment.

[15] In den Jahren 1763-64 wurden für das 1. Grenzregiment in der Gegend Hunedoara 13 Schulen gegründet, vor allem in Orlat, Hateg und Vaida-Recea; für das 2. Regiment in Nasaud und danach in anderen 5 Gemeinden; rund 100 Grenzerschulen im Banat. Siehe mehr dazu in Brandsch 1928, 10f.

[16] Siehe mehr dazu in Constantinescu / Daicoviciu / Pascu 243f.

Die Fürstlichen Akademien in den 2 anderen rumänischen Fürstentümer wurden schon Ende des 17. Jh. errichtet. Am Anfang des 18. Jh. wurden diese Hochschulen neu organisiert, dank der Regelungen der Fürsten Nicolae und Constantin Mavrocordat, Grigore Ghica und Grigore Alexandru Ghica, die die Modernisierung und Vergriechung des universitären Unterrichts in der Moldau und der Walachei (sowohl was die Sprache als auch was den Inhalt betraf) verfolgten. Die jungen Leute, die diese Akademien besuchten, vervollständigten ihre Studien in Lemberg, Konstantinopel, Rom und Wien.[17]

In der 2. Hälfte des 18. Jh. wurde eine Reihe von Reformmassnahmen in den Fürstlichen Schulen und Akademien in Jassy und Bukarest eingeführt. Den aufklärerischen Geist kann man in den wissenschaftlichen Fächern erkennen, die man eingeführt hat: Rechnen, Geometrie, Naturwissenschaften, Ingenieurwissenschaft; durch die Bedeutung, die man verschiedenen Fächern gibt: Geschichte, geschichtliche Geographie, klassische und moderne Fremdsprachen, nachher auch der rumänischen Sprache. Auch wenn die aristotelische Philosophie ihre führende Rolle aufrechterhält, kann man bemerken, dass auch die pädagogischen Ideen Pestalozzis bekannt waren.[18]

1.6. Moldau und Walachei bis zur Vereinigung 1859

Trotz der aufgeklärten Mentalität der Fürsten entwickelte sich der Unterricht langsam und unkontinuierlich. Die Reformen des Unterrichts von 1776, 1813 und 1818 hatten nur geringen Verbreitungskreis.

Die Fürstliche Akademie in Bukarest hatte 1776 9 Lehrer. Hier wurde Grammatik, Arithmetik, Geometrie, Astronomie, Geschichte, Physik, Theologie, Latein, Französisch und Italienisch unterrichtet. Danach wurden aber auch Naturwissenschaften eingeführt.

Die Anzahl der Schüler, auf 5 Stufen eingeteilt, war immer gering, ein paar Dutzende / Stufe, während des ganzen 18. Jh. 1834 besuchen nur 1129 Moldauer und nur 3050 Walacher öffentliche Schulen. Eine fast gleiche Anzahl wurde privat unterrichtet. [V. Georgescu 136[19]]

1803 wurde urkundlich das Seminar *Socola* gegründet. Hier wurden Priester- und Bojarensöhne in rumänischer Sprache unterrichtet. Ausser den religiösen wurden hier auch weltliche Unterrichtsfächer angeboten: Arithmetik, weltliche Geschichte, Psychologie, Logik u.a. An diesem Seminar wurde das erste Mal klar gestellt, dass der Unterricht in der Muttersprache stattfinden sollte. Die Leitideen des Seminars haben nicht lange überlebt.

In der Moldau wird durch den Gelehrten Gheorghe Asachi eine Sonderklasse für Ingenieurwissenschaften an der Fürstlichen Akademie Jassy gegründet,

[17] Siehe dazu mehr in Costantinescu / Daicoviciu / Pascu 262-263
[18] Mehr dazu in Constantinescu / Daicoviciu / Pascu 279f.
[19] Eigene Übersetzung

während der Siebenbürger Gheorghe Lazar[20] in der Walachei die fürstliche Schule *Sfantul Sava* geleitet hat.

Der Triumph der rumänischen Sprache fand nur im 19. Jh. statt. Im Gesetz von 1829 – *Organisches Reglement* - *Regulamentul Organic* [21]– wird festgelegt, dass die öffentliche Erziehung eine Aufgabe der Regierung wurde und dass der Unterricht in rumänischer Sprache stattfinden sollte.

Es war zweifellos ein grosser Schritt nach vorwärts, wenn die Sorge für das Schulwesen den Herrschern zur Pflicht gemacht, wenn Schulen für beide Geschlechter vorgesehen, wenn Rumänisch zur Staats- und Kirchensprache und zur Sprache der Justiz gemacht, wenn die Privatschulen unter die Kontrolle des Staates gegeben und die Verwaltung der Schulen einer eigenen Körperschaft (Epitropie) anvertraut wurde. [Brandsch 1926, 14f]

In der Walachei wurde 1831 ein Erziehungsrat[22] gegründet, das die Schulen des Fürstentums beobachten und kontrollieren sollte. Wir können 4 Schularten erkennen:

- Grundschule (*scoalele incepatoare*),
- humanistisches Gymnasium (*umanioare*),
- Lyzeum (*invataturi complimentare*)
- Spezialschulen (cursuri speciale).

1858 wurde dieses System modernisiert, indem man das Gymnasium für 2 Studienrichtungen gestaltete: Geistes- und Naturwissenschaften. Auch der Abschluss des Lyzeums wurde jetzt vereinheitlicht durch die Einführung der Baccalaureatprüfung.

Auch in der Moldau wurde 1832 ein Erziehungsrat[23] an der Führung des Unterrichtswesens gestellt. Hier wurden mehrere Schulen im laufe der Zeit in den Städten gegründet. Auch eine Hochschule wurde 1834 durch den Fürsten I. Sandu Sturza errichtet. 1847 wurde diese geschlossen, da es sich zu einem Forum der Verbreitung revolutionärer Ideen entwickelt hatte. 1851 reformiert der Fürst Grigore Ghica den moldauischen Unterricht, indem er die Mittelschule in 2 teilt: Realschulen und Gymnasien. Derselbe ordnete durch ein Gesetz die Unentgeltlichkeit des Unterrichts und eine Art Schulzwang (1850). 1855 werden Schulen für die Ausbildung von Grundschullehrern gegründet. 1857-58 gab es in der Moldau 2 Gymnasien (Jassy und Barlad) und 3 Realschulen (2 für Jungen in Jassy und Galatz und eine in Jassy für Mädchen).

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[20] Doktortitel in Wien

[21] Das Gesetz ist sowohl für die Moldau als für die Walachei gültig, denn es ist die rumänische Anwendung des Paktes nach dem Adrianopoler Frieden, infolge dem Ende des russisch-türkischen Krieges 1827. Das Gesetz tritt 1831 in der Walachei und 1832 in der Moldau in kraft. Siehe dazu mehr in Constantinescu / Daicoviciu / Pascu S. 285ff.

[22] Eforia Scoalelor, gebildet aus 3 Bojaren und einem Fachinspektor. Siehe mehr dazu in Nes 26.

[23] Epitropia Casei Invataturilor Publice, geführt vom moldauischen Metropoliten. Mehr dazu in Ioan Georgescu 104f.

Während das alte Königreich, fasziniert von Paris, vorwiegend unter dem Einflusse französischer Kultur stand, brachten die Siebenbürger (die hierher als Lehrer kamen), die mit deutschen Universitäten, namentlich mit Wien in Verbindung standen und in Rom ihre Begeisterung nährten, den ausgleichenden Einfluss deutscher Kultur und römischen Bewusstseins nach Rumänien. [Kiritescu, 447]

2. Von 1959 bis 1918

2.1. Rumänien zwischen 1859 und 1918

Nach der Vereinigung Moldaus mit der Walachei (1859) erschien es als notwendig, nach der Einheit des Verwaltungssystems auch der Einheit des Unterrichtswesens zu erstreben. Dieses Anliegen wurde vom Fürsten Alexandru Ioan Cuza unterstützt. Der schnelle Wuchs der Schüler- und Schulenanzahl, die Verbesserung der Qualität und des Inhaltes des Unterrichts waren als Mittel zur Reduzierung des Analphabetismus gedacht. Die Einführung des lateinischen Alphabets war ein bedeutender Fortschritt.

Das Unterrichtswesen war am Anfang der modernen Epoche Rumäniens weder als System als auch als Inhalt modern. Die Bojarensöhne konnten sicherlich von ausländischen Lehrern unterrichtet werden oder private Schulen besuchen, aber die öffentlichen Schulen hatten 1834 ins gesamt 725 Schüler in den beiden Fürstentümern. 1850 wächst ihre Zahl auf cca 10.000.[24]

Eine bedeutende Errungenschaft des Fürsten Cuza war die Organisierung des Unterrichts. Das Gesetz zur öffentlichen Erziehung / *Legea instructiunii publice* / vom 25.10.1864 steht als Grundlage für den Unterricht in Rumänien für die nächsten 3 Jahrzehnten. Durch dieses Gesetz werden 3 Niveaus im Unterricht festgelegt:

- Grundschule,
- Sekundärschule und
- Hochschule.

Im Gesetz wird vorgeschrieben, dass "der Volkschulunterricht verpflichtend und unentgeltlich ist" [Constantinescu / Daicoviciu / Pascu, 368], was eine andere bedeutende Fortentwicklung war. "Die Schulpflicht erstreckt sich auf ein Alter von 8-12 Jahren. Bei unentschuldigten Schulversäumnissen der Kinder werden der Eltern mit Geldstrafen belegt" [Brandsch 1928, 16]

Das Gesetz setzte folgende Schularten für den Sekundärunterricht fest:

1. Lyzeen (7 Klassen) und Gymnasien (4 Klassen), mit klarem und einheitlichem Lehrplan und Baccalaureatabschluss;
2. Mittelschulen für Mädchen (5 Klassen);
3. Real- und Berufsschulen für Handel, Industrie und Landwirtschaft.

[24] Siehe mehr dazu in Vlad Georgescu, S. 212.

Der Mangel an Schulen und Lehrkräften, die schweren Lebensbedingungen der Bauer, die allgemeine gesellschaftliche Lage machten aber die Anwendung dieses Gesetzes sehr schwer. Nur in wenigen Ortschaften konnte es also in Kraft treten. Der sekundäre Unterricht wurde meist von Jugendlichen aus der Mittel- und Oberschicht besucht. Ein paar Gymnasien funktionierten schon in Bukarest, Jassy und Craiova. Es werden also immer mehr Schulen und Gymnasien in ganz Rumänien gegründet.[25] Zwischen 1864-65 wurden in Rumänien 1988 Schulen und 61977 Schuler verzeichnet.[26]

Die Fragen des Unterrichtswesens wurden in eigene Fachzeitschriften schon während der Revolution von 1848 erörtert. Es wurden also neue rumänische Lehrwerke und andere Fachbücher für den Unterricht entworfen. [27]

Im Laufe der Zeit wurde der praktische Fachunterricht entwickelt: Fachschulen, Gewerbe-, Landwirtschafts-, Handels- und Kunstschulen.

Ein besonderes Interesse wird vom Fürsten Cuza dem universitären Bereich gewidmet: Universitäten werden in Jassy (1860) und Bukarest (1864) gegründet. Die medizinische Fakultät in Bukarest (als Weiterentwicklung einer bekannten Medizinschule), die Hochschule für Wege und Brücken (künftige Polytechnische Fakultät), die Landwirtschaftsschule in Herastrau, die Musikkonservatorien in Bukarest und Jassy vervollständigen die Liste der universitären Einrichtungen. Die Anzahl der Gymnasien (Sekundarschulen) und der Normalschulen (Ausbildung von Grundschullehrern) wächst auch erheblich.

Nach dem Unabhängigkeitskrieg (1877-78), am Ende des 19. Jh. stellt sich immer mehr die Frage der Modernisierung des Unterrichts. 1898 kam Spiru Haret an der Führung des Unterrichtsministeriums und hatte die volle Unterstützung des Königs Karls I. Sein Gesetz für die Organisierung des Sekundärunterrichts reformierte das Unterrichtswesen und blieb gültig bis zur Unterrichtsreform von 1928. Spiru Haret teilte die 8 Lyzeumsklassen in 2 Stufen ein: Gymnasium (4 Klassen) und Lyzeum (4 Klassen). Das Gymnasium hatte einen einheitlichen Lehrplan, während die Oberstufe (das Lyzeum) in 3 Richtungen verlief – klassisch, modern und real – und wurde durch eine Abschlussprüfung beendet. Auch für Mädchen wurden die Schulen neu eingeteilt: Sekundärschulen I. Grades (gleich dem Gymnasium für Jungen) und II. Grades (Lyzeum der Jungen). 1893 gelang es Tache Ionescu ein neues Grundschulgesetz - *Legea asupra invatamantului primar si normal primar* - durchzusetzen. 1898 wurde das *Gesetz für den Sekundären und Höheren Unterricht* und 1899 das Gesetz für den Gewerbeunterricht (scoli profesionale), beides Arbeiten Spiru Harets, erbracht.

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[25] 1863 Braila, Jassy; 1864 Ploiesti, Jassy; 1865 - Bukarest 2 Gymnasien, Jassy – 2 Gymnasien, davon 1 für Mädchen; 1866 Focsani, Pitesti; 1867 – Buzau, Galatz; 1868 – Giurgiu; 1869 – Falticeni. Insgesamt 15 Lyzeen und Gymnasien. Siehe mehr dazu in Kiritescu 1925, 17.

[26] Brandsch 1926, 15.

[27] Mehr dazu in Costantinescu / Daicoviciu / Pascu *348f.*

1899 erliess das Oberbildungsrat des Unterrichtsministeriums (*Consiliul Superior de Instructie)* den ersten einheitlichen Lehrplan für den Sekundärunterricht in Rumänien, der 1908 von einer Fachkommission verbessert und modernisiert wurde.

2.2. Siebenbürgen bis 1918

1850 tritt in Kraft das *Entwurf der Organisation der Gymnasien und Realschulen in Österreich*[28], das den Unterricht in ganz Ungarn bis 1879 regeln wird. Das *Entwurf* gründete ausser den Humangymnasien auch Realschulen, die Schüler für die technischen und industriellen Berufen und Hochschulen vorbereiteten. Es führte ein duales Unterrichtssystem ein: der Sekundärunterricht hatte 2 Stufen: Unter- und Oberstufe. Der Realunterricht hatte seinerseits 2 Stufen von je 3 Jahren.

Durch den *Entwurf* wurde auch anderes hervorgerufen. Der erste Lehrplan für den Realunterricht wurde dadurch festgelegt. Ziel dieses Unterrichts war, den Schülern eine Allgemeinbildung zu übermitteln, ohne die Unterstützung der alten Sprachen, diese für praktische Berufe (Handel, Gewerbe, Landwirtschaft) und sie für technische Hochschulen vorzubereiten[29].

Das Abkommen zwischen Ungarn und Österreich führte dazu, dass das Fürstentum Siebenbürgen 1860 an Ungarn abgetreten wurde.

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[28] Zwischen 1850-1868 ist die deutschsprachige Periode Siebenbürgens. Mit 1867 beginnt der österreichisch-ungarischer staatsrechtlicher Ausgleich. Siebenbürgen fällt an die ungarische Reichshälfte. Widerstand der Rumänen, Sachsen und Schwaben gegen die Magyarisierungsbestrebungen. Zwischen 1868-1918 finden wir den ungarische Zeitabschnitt in der Geschichte Siebenbürgens: "Die ungarischen Lehrer mussten Rumänisch sprechen, diese internationale Sprache Siebenbürgens, denn ohne diese Kenntnisse hat man die Jugend schwer erziehen können" [Anuarul Liceului din Sibiu 1948, 12]

[29] Hier können wir laut **Nes,** 14 folgendes Fächerkanon finden:

Fach	Jahr I	II	III	IV	V	VI
Religion	2	2	2	2	2	2
Muttersprache	4	5	3	5	5	5
2. moderne Fremdsprache	4	3	3	5	5	5
Geografie und Geschichte	2	2	3	3	3	3
Mathematik und Angewandte Arithmetik	5	5	3	5	4	4
Naturwissenschaften	5	4	-	4	2	-
Physik	-	-	-	-	4	5
Technologie	-	-	5	-	-	-
Warenkunde			1. Sem 2			
Zeichnen	5	5	1. Sem. 5 2. Sem. 7	6	6	6
Schönschreiben	2	2	2			
Gesamtstundenanzahl	29	28	28	26	29	30

Die öffentliche Sprache war bis 1868 das Deutsche, aber auch Ungarisch und Rumänisch als Muttersprache durften unterrichtet werden.[30] Ungarisch als Fach konnte fakultativ im Gymnasium gelernt werden, zusammen mit Deutsch oder anderen Fremdsprachen. Altgriechisch war verpflichtend; in die Mitte des Unterrichts stand die altgriechische Kultur und Literatur. Ungarisch wurde 1860 verpflichtendes Fach in den staatlichen Schulen auf allen Niveaus, ohne aber zur Grundlage des gesamten Unterrichts in Ungarn (und Siebenbürgen) zu werden.

Der Anschluss Siebenbürgens, das über Jahrhunderte autonomes Fürstentum gewesen war, an Ungarn, bedeutete den Anfang einer aktiven Magyarisierungspolitik, die die ungarische Führungsschicht bis zum Zerfall der doppelten Monarchie 1918 führte. [Georgescu 189]

1868 tritt das *Gesetz XXXVIII* [31] (eingereicht vom Kultusminister Eötvös) in Kraft. Das Gesetz sprach die allgemeine Schulpflicht für Kinder vom 6.-12. bzw. 15 Lebensjahre aus und sicherte die Freiheit des Unterrichts zu. Der neue Lehrplan stellte die ungarische Sprache und Literatur im Zentrum des Unterrichts. Ungarisch wurde zur einzigen und verpflichtenden Sprache im Unterricht.

1879 wurde die Reform des ganzen Unterrichtswesens beendet. Im Gesetz *XVII* wurde die ungarische Sprache als verpflichtend in allen Schulen und auf allen Schulniveaus festgelegt.[32]

The consequence of assimilation (Magyarisation) was that the number of Rumanian schools, in the territory annexed to Rumania in 1918, diminished between 1880 and 1914, from 3.150 to 2.170, while the number of German schools fell from 389 to 290, and in the meantime the German language disappeared completely also from another 230 bilingual German-Magyar schools, these last ones remaining purely Hungarian. [Caliani 6]

Diese Situation wurde als absolute negativ von den Rumänen aus Siebenbürgen empfunden, da sie bemerkten, dass ihre eigene Sprache und ihr Nationalitätsgefühl bedroht waren.[33]

Eine Reihe von Schulgesetzen, beginnend mit dem Gesetz XXXVIII von 1868 und bis zum Gesetz von Appony – 1907 – zwingen die ungarische Sprache zum Nachteil der Sprachen der mitbewohnenden Nationalitäten auf. [Vlad Georgescu 189]

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[30] In dieser Zeit wurden die rumänischen Gymnasien in Beius, Blasendorf und Kronstadt gegründet.

[31] Die Gründung staatlicher Schulen, die den bisher ausschliesslich konfessionellen Unterricht ergänzen sollte.

[32] 1880 gab es in Siebenbürgen 266 Schulen aller Niveaus, in denen in ungarischer Sprache unterrichtet wurde.

[33] Die Bevölkerung gliedert sich 1910 in 34,2% Ungarn, 55,1% Rumänen, 8,75% Deutsche, 2% andere. [Quelle: Informationen über Siebenbürgen, www.sibiweb.de]

Was die Realschulen betrifft, diese erhielten z.B. 1884 durch das Gesetz XVII einen neuen Lehrplan, der weitaus mit kleinen Änderungen bis 1918 erhalten blieb.[34].

2.3. Bukowina

Die Bukowina hatte bis 1775 die kulturelle Entwicklung der Moldau, zu der sie gehörte, mitgemacht. Als sie aber in diesem Jahr von Österreich annektiert wurde, wurde sie damit in den Kulturkreis der österreichischen Länder gestellt. Zur Zeit der Annexion gab es in der Bukowina 8 rumänische Staatsschulen, einige Kloster- und Dorfschulen. Solange die Bukowina als Militärgrenze verwaltet wurde, ging es den rumänischen Schulen verhältnismässig gut, sie begannen aber stark zurückzugehen, als die Bukowina mit Galizien vereinigt wurde.

Aus einem Schulprogramm aus 1789 ist zu ersehen, dass damals die Kinder in der ersten Klasse der Volksschule die Buchstaben kennen lernten und die Druckschrift und Briefe in rumänischer Sprache lesen lernten; in der zweiten Klasse lernten sie zuerst die rumänische und dann die deutsche Sprache und Schrift und andere Sachen weitläufiger. [Brandsch 1928, 22]

Erst mit der Erhebung der Bukowina 1849 zu einem eigenen Kronland und mit der Unterstellung der rumänischen Schule unter das griechisch-orientalische Konsistorium in Czernowitz begann eine neue Entwicklungszeit auch für das dortige rumänische Schulwesen. Neben über 200 rumänischen Grundschulen besass die Bukowina seit 1875 eine rumänische Theologische Fakultät und 2 Lyzeen (eins für Mädchen und eins für Jungen) in Czernowitz.

II. Rumänien nach 1918 bis heute folgt in der nächsten Nummer der Zeitschrift.

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[34] Folgendes Fächerkanon war für die Realschulen gültig:

Fach	I	II	III	IV	V	VI	VII	VIII
Religion	2	2	2	2	2	2	2	2
Ungarische Sprache und Literatur	5	5	3	3	3	3	3	3
Deutsch	5	4	3	3	3	2	2	2
Französisch	-	-	5	5	4	4	3	3
Philosophie	-	-	-	-	-	-	-	3
Geografie	3	3	-	3	-	-	-	-
Geschichte	-	-	3	-	3	3	3	3
Mathematik	3	4	3	4	5	4	4	3
Naturwissenschaften	2	2	-	-	2	3	3	-
Physik		-	-3	-	-	-	4	5
Chemie	-	-	-	2	2	3	-	-
Technisches Zeichnen	5	5	2	2	2	2	2	2
Kunstzeichnen	-	-	2	2	2	2	2	2
Schönschreiben	1	1	-	-	-	-	-	-
Turnen	2	2	2	2	2	2	2	2
Gesamtanzahl Stunden	28	28	28	28	30	30	30	30

Jahrbuch Realschule Oradea, 1875, S.6

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BEYOND USING ROLE-PLAY AS A CLASSROOM SPEAKING ACTIVITY

BIANCA BRETAN

SOMMAIRE. L'article "Au dela du jeu de rôle en tant qu'activité didactique" veut nuancer la place que ce procédé peut occuper pendant le travail en classe. Quoique utilisé dans le cadre des heures de langues étrangères comme une modalité de dévéloppement de l'expression orale, le jeu de rôle peut accomplir une autre fonction aussi, de grande importance pour nos étudiants ou élèves. Son emploi peut être une "répétition" et une accomodation aux divers rôles que ceux-ci adopteront dans la société. Etre familiarisé à partir de la période de scolarité avec certaines manières de comportement ou de réaction dans diverses situations/rôles rendra plus facile l'accomplissement des tâches par les jeunes gens au moment où ils quitteront l'école. En même temps, l'article apprécie la valeur didactique du jeu de rôle, un des meilleurs moyens d'amélioration du discours oral.

As teachers, we have a tendency to forget that classroom is just an administrative convenience and learning does not stop when the students leave the school building. Learning is a process that goes both ways: on the one hand we have interaction with the outside world, bringing our experiences from everyday life in the class and on the other we take and apply our academic knowledge in the "real world". School is the place where the learners' core skills and competencies are formed and developed, and students rely on them when faced with different situations in everyday life.

There are many classroom activities that prepare the young students for different tasks they will perform in society. For example, learners who are familiar with groupwork will adapt easier when their job requires to work as part of a team.

The same is true about role-play, a procedure mostly used in language teaching classes but also in other subjects (I mention here an example from a second grade textbook for Romanian where a lesson topic like "Prietenia" – "Friendship" can lead to a role-play followed by discussions and conclusions).

For a simulation to work it must, according to Ken Jones, have the following characteristics:

- **reality of function**: the students should think of themselves as real participants in the situation

- **a simulated environment**: the teacher decides on the setting of the activity (for example an office, an airport area)
- **structure**: students must see how the activity is constructed and they must be given all the necessary information.
  From K. Jones (1982: 4-7)

The same is true for a role-play, where the teacher gives the participants information about the characters they are going to perform. For example, a student might be told that she needs an afternoon off as she has a dental appointment. She asks her boss for permission, explaining the reason and trying to persuade him. Role-plays are more efficient when they are open-ended, so that different people can express different views on the same situation and a consensus has to be reached. Even if the activity is not open-ended it is better to be followed by discussions and conclusions.

When used for teaching foreign languages the purpose of this activity is to enhance speaking skills and to develop fluency. The advantage is obvious: doing role-play gives students a chance to use language in new contexts and for new topics but also encourages students to use natural intonation and gestures.

But the benefits of this procedure are nor limited at the level of developing speaking skills. In fact, learners are exposed to a diversity of social situations and settings they might encounter in the future.

The European Union has decided that one of its main goals in matters of educational policy is the training of students for their future integration in society. Therefore, it is school's responsability to offer opportunities for all students to develop the knowledge, skills and competencies that are necessary for the achievement of this target. In this context, class activities such as role-play can be considered as a "rehearsal" for a diversity of social encounters the students will be exposed to when leaving school.

Without activities like simulation or role-play, classes of different subjects offer just a limited pattern of interaction and the use of the roles is restricted to only two: teacher and school pupil. This situation is artificial from a social point of view because every time the circumstances are almost unchanged, based on a relationship of authority (teacher) and submission (students) that doesn't alow flexibility. Or, circumstances of everyday life differ exactly in the fact that they change and one has to adapt his/her behaviour on every occasion. Society roles will not be played twice precisely in the same manner.

According to E. Goffman our activities and encounters in society take the form of a social performance described as all the situations that an individual experience "during a period marked by his continuous presence before a particular set of observers and which has some influence on the observers". (Goffman, 1990: 32). As dramatic performers the individuals have to adopt a mask that best suit

their personalities or their needs at the time of the performance. This mask will be the mark that in the end will express our personality in society. R.E. Park says:

"In a sense, and in so far as the mask represents the conception we have formed of ourselves – the role we are striving to live up to – this mask is our truer self, the self we would like to be. In the end, our conception of our role becomes second nature and an integral part of our personality. We come into the world as individuals, achieve character and become persons". (Park, 1950: 249).

As in any dramatic performance, the individual who plays a part addresses to an audience, requesting it to "believe that the character they see actually possesses the attributes he appears to possess, that the task he performs will have the consequences that are implicitly claimed for it, and that, in general, matters are what they appear to be". (Goffman, 1990: 28).

The implication involved is that the individuals have to perform these roles as naturally as possible, otherwise they would lead to disbelief. So, being successful means in this perspective possessing a set of dramatic skills that could be inborn or could be learnt, but for sure they can be developed by practice.

Therefore, it is the teacher's task to prepare the transition from one social role (school pupil), to the others. He/she should be aware of the fact that in the early stages of starting a new role the former students may have problems if they are not fully prepaired for a job and don't know how to behave. This may lead to inconsistent behaviour and rejection of the young people. In order to avoid this kind of situations the teacher should choose suitable roles for school classes that could widen students' life experience. Examples of such roles: act as a clerk, teacher, nurse, manager, police officer.

Another important element in doing role-play is using situations which go beyond the textbook. This way, not only that students have to decide what language to use and how the conversation should develop but they will also reveal their personal set of attitudes and beliefs about the roles in question.

An example of such a situation could be:

You are studying in England, and have been expecting a letter from your parents for over a fortnight now. You know it was sent by express post, and should have arrived by now. You have been pestering the postman for a week, and he finally refers you to the local post office. As the clerk there is very unhelpful, you soon get angry with him, and you demand some sort of action.

From Interview practice by C.N. Grivas-Ionic Graphic Arts 1990.

As a conclusion, the formative function of the role play consists in the fact that, on the one hand, the student develops his future social skills, gets accustomed to a variety of roles and, on the other, he/she develops communicative skills, necessary for choosing an appropriate language for each social situation. The gain is also at the intellectual level and personality development. As R.E. Park says:

"It is probably no mere historical accident that the word person, in its first meaning, is a mask. It is rather a recognition of the fact that everyone is always and everywhere, more or less consciously, playing a role (...) It is in these roles that we know each other; it is in these roles that we know ourselves". (R.E. Park, 1950: 249).

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THE REFLECTION OF THE OTTOMAN EMPIRE HISTORY IN THE ROMANIAN SCHOOL HISTORY CURRICULUM AND TEXTBOOKS

CĂLIN FELEZEU

ZUSAMMENFASSUNG. Der Artikel "***Die Reflektierung der Geschichte des Ottomanischen Reiches im rumänischen Schulcurriculum und Lehrbücher für Geschichte***" nimmt sich eine Analyse des Ottomanischen Phänomäns und dessen Reflektierung in den rumänischen schulischen Lehrplänen und Lehrbüchern vor. Als Neuigkeit stellen wir auch eine geschichtliche Perspektive über diese Phänomen vor, da die ottomanische Geschichte eine Komnstante in den rumänischen Schullehrplänen seit dem 18. Jh. war. Letztendlich wird weiter die Objektivität unterstrichen, wodurch die Ottomanische Geschichte in den rumänischen Geschichtsunterricht reflektiert wird.

Being an important element for the Balkans and the European history, the Ottoman Empire raised from the very beginning the interest of the European historiography, always preoccupied to discover the dimensions and origins of the largest enemy of Christianity during the medieval period. Beginning with the 16h century – an important time because it was then when the idea of Turkish studies crystallized – and following the direction adopted by the European policy, historiography dedicated to the Ottoman history remarkable chapters, offering glimpses of the image that the Europeans had about their powerful enemy.

Unbalanced and contradictory sometimes, depending on the political priorities of the moment or on the religious trends (Reform, Counterreform), its image was gradually elaborated as the continental society met the Ottoman issues, many times crystallizing a one sided vision that tended to become more complete as the Modern Period came closer.

Moreover, the Ottoman impact was perceived more accurately by the Romanian history, due to the presence of the Romanians in the first line of fire against the Ottoman Porte and, then, in the economical and political system of the Turkish Empire. Ottoman matters always had a privileged place in the Romanian historiography for a number of reasons, among which we can mention: the concern for maintaining the independence, the question of the autonomy of the Danubian principalities, the policy aimed to preserve a special relationship with the Ottoman Porte and the imminence of a change in the status of the Romanian principalities which were to become Ottoman provinces.

Because of the special status that Romania had in relation with the Turkish Empire in the Middle Ages and the Modern Era, the history of the Sultans' Empire was always connected with the Romanian geopolitical area, decisively influencing in time the evolution of the Romanian principalities.

Equally, the Ottoman impact determined the Romanian spirituality, imposing a specific, individualized direction on the cultural sphere, illustrating mental attitudes that were changing along with the specific image that each period in history had about the Turks and their Empire.

Under such circumstances, the Romanian historical research dealt from the very beginning with the Romanian-Ottoman relationship and the peculiarities of the connections with the Ottoman Porte, some aspects of the Ottoman rule and their multiple facets and mainly with the anti-Ottoman effort of the Romanian principalities from the first contacts with the Turks up to the Modern Era. Naturally, the history of the image was one of confrontation between two worlds, two civilizations and two unequal forces, fact that mattered in terms of objectivity and reality of facts. Until then, the researches regarding the sphere of Romanian-Ottoman relationship offered some fragmentary clues that allow us to rebuild the image, distorted as it is.

Contemporary historiography, in its attempt to enlarge the topic and consolidate the credibility of the written history, which tends to get closer to the history of reality, has diversified the methodological and conceptual approach to areas less researched in the past, such as the history of civilization and collective mentalities or the way in which historical realities are reflected in school curricula and textbooks.

Our attempt, focused on the perception of the Ottoman Empire in contemporary school history curriculum, has as an end the reconstruction of the Ottoman society image starting with the Era of Osman's Emirate and continuing up to Kemal Ataturk's Revolution, being concerned to gather the basic, fundamental components of the vision about the Turkish-Ottomans as reflected in the new Romanian National Curriculum. Such a topic is validated by the necessity of getting an insight into the perception that the school study of history in Romania has about the Ottomans and by the need to better research the past of the Romanian-Ottoman relationship. An objective image about the evolution of the Turkish Empire offers Romanian students supplementary information and arguments for the understanding of the connections with the Ottoman Porte.

School has always been and will be a true barometer of objective realities and this is the reason why it can convey messages, messages that can add weight to a topic. From this perspective, the history of the Turkish Empire has a central place in the Romanian school curriculum. In this respect we consider that Dimitrie Cantemir should have a special place. A true genius, both claimed by the Romanians and the Turkish, he marked the beginning of researches on Ottoman history. Not unusual, the impact of the new image that he offered would be reflected at the level of

historiography and education but also at the level of perception of the Turkish history as a field of research for his young followers.

The first manifestation of this trend in the Romanian area has as a representative a school teacher and historian, Popa Flor, who was teaching at Old Saint George's Church in 1756. He wrote the first Romanian history textbook dedicated exclusively to the Ottoman Empire. Entitled "Pictures of Turkish Emperors Together With Their Summarized Histories, About the Way they Succeeded One After the Other, From the First to the One Who Is Currently the Emperor", the textbook is kept as an original manuscript at the "Ossolineum" library in Lwov, has 21 pages of dimensions 34,5 20,5 cm. On the first page there are pictures of 27 Sultans, from Osman to Ahmed III, under each picture is printed the name of the Sultan and a number indicating the order of succession.

The manuscript is written in Romanian by Popa Flor and is of an outstanding importance for several reasons. First, it is a special research consecrated to the Ottomans; its preface justifies why his history of the Sultans began with Osman and not with Mehmet II, addressed as "the first Turkish Emperor according to some historians, the one who conquered Constantinople for the first time". The history of the Ottoman emperors starts with Osman because, in Popa Flor's opinion, he was " the first one to take the throne that still belongs to the Turkish Emperors."

It is obvious that his perspective on events is the same as D. Cantemir's, Popa Flor also considering Osman as the beginner of the dynasty, according to the historical truth.

Secondly, the importance attached to Popa Flor's book is explained by its didactic nature, by the fact that it was destined to school use (its author was a teacher himself). Therefore, we can say that the interest in the study of the Ottoman Empire history had begun from the middle of the 18th century,and kept growing during the following period of time.

A special attention should be given to the 27 pictures representing the Sultans. Besides their artistic value, that underlines Flor's talent, the pictures remarkably suggest the ups and downs of the Ottoman Empire. My observation is based on the fact that the are obvious differences between the first paintings (that show a gallery of Sultans with very distinct features, resembling the uprising Empire) and the last ones, which, starting with Selim II, underline the physical weakness of the Sultans that ruled over a weaker empire.

This is a classical example of the way in which historical research and contemporary realities are reflected in textbook units. The cyclic way in which Popa Flor presented the evolution of the Turkish Empire suggests that the teacher from Bucharest studied and was familiarized with D. Cantemir's "History".

The interest for the Ottoman-Romanian relationship and, generally, for the history of the Ottoman Porte, had increased together with the awakening of the national conscience, and the cultural ideological current of Romanticism. Romanian Romanticism focused, as historiography is regarded, on Middle Ages and world

history issues. In his introduction to "Facts of World History", Aaron Florian underlined the importance of world history, mostly about "those countries and nations that influenced our faith". Even if historiography in Romanticism didn't produce special studies on Ottoman issues, its contributions are, nevertheless, of special importance. The largest amount of information (presented in an objective manner as the Turkish society is concerned) comes from a world history textbook wrote by Aaron Florian in 1847, entitled "Facts of World History". In this textbook written for students' use, Aaron Florian draws a factual scheme of the Turkish history in the context of world history. Inspired by the several world history books of the time, the information offered by the historian to his students reconstructed the evolution of the Empire on the basis of many sources, even if some chronological mistakes could be found (an example here might be the date referring to the fall of Adrianopolis and its transformation into capital city of the Empire, mistakenly recorded as 1358 and not 1361). Disregarding the few chronological errors, the textbook represents a useful resource for the reconstruction of an objective image on the Ottoman Empire.

The conquest of Adrianopolis under Murad I represents a period of growing Ottoman power accompanied by territorial expansion in the Balkans. In his attempt to present the historical facts and events as objective as possible, Aaron Florian considers as a general cause of the growing influence of the Ottoman Porte the rivalries and misunderstandings between the Christian rulers, the fall of the Byzantium but also the force and careful administration that stayed beyond the Emirate founded by Osman. Despite their position as enemies of Christianity , the Ottomans are regarded (in some stages of their expansion in the Balkans) as liberators of a very poor and traumatized population that had suffered from the various conflicts that led to anarchism at the end of the 14th century. The conquest of Constantinople is perceived as a shock and a divine punishment for the Greeks that had committed a lot of injustices during the Byzantium period (this point of view was mostly spread in Transsylvania at the end of the 18th century).

In our opinion, the strength of this book that latter turned into a textbook consists in the acknowledgement of the peak of the Ottoman power during the reign of Selim I and Suleyman I when, "the Ottoman Empire reached its peak of expansion and domination". Selim I is seen by Aaron Florian as a "fearless conqueror who was able to mobilize the Turkish towards new conquers and heroic deeds". The historian and schoolteacher Florian also vividly depicts the gradual growing of the Ottoman power, its invasion on three continents and, implicitly, the legacy left. Besides this evolutionist perspective, Aaron Florian also brings into discussion the relationship between the Romanian Principalities and the Ottoman Porte and the ahd-name issue.

We can conclude then, that in his book, the historian and schoolteacher Florian succeeds in integrating the Ottoman topics in the world history context, giving us an objective point of view about the Turkish society of the time. These

last aspects are even more important if we take into consideration the segment of audience targeted: the young generation who is always in search for the truth.

The impact of Dimitrie Cantemir's works, the Romanticism and the consequences of the 1877-1878 war kept the Ottoman issues as an unquestioned point of interest both for historiography and for school education.

The most important influence on this regard comes from the outstanding personality of Nicolae Iorga. In his large number of works he approached almost all the points of interest in Romanian and world history. His studies about Western Europe, Byzantium, the Ottoman Empire, the Balkans states, the western and eastern slaves were extremely appreciated at that time, being considered as essential reference studies even nowadays.

Due to Iorga's diligent efforts in the first decades of the XXth century, the Romanian school curriculum succeeded in maintaining an interest on Turkish-Ottoman issues. An objective perspective was kept and the information was accurately transmitted.

In the years that followed the second world war, the area of research widened, focusing more and more on the Romanian-Ottoman relationship. In this context, the research from Ottoman sources became a priority. The consequence was the printing of Turk-Ottoman documents that were about Romanian-Ottoman issues during the Medieval Period and the Modern Era. The documents were the result of the hard work of many researchers from the *Nicolae Iorga Institute* or the *South Eastern European History Institute* such as : Mustafa Ali Mehmet, Mihail Guboglu, Tahsim Cemil, Valeriu Veliman, Virgil Ciocaltan, Cristina Fenesan, Anca Ghiata. The researches in the field of re-evaluation of the Turkish-Ottoman documents were revigorated after 1985 when, at professor Mihai Maxim's initiative was created at the Bucharest University the *Laboratory for Ottoman Studies.* In 1993 it was transformed in the *Center for Turkish-Ottoman Studies* with the goal to prepare competent specialists and to offer accurate information on Ottoman history. The results could be seen immediately, one of the first achievements was a textbook that brought a new perspective on historical reality.

As one could easily notice, it wasn't our intention to give a minute description of the presence of the Ottoman issues in the Romanian educational system, but to highlight the long tradition of the study on that topic. Next, we will be more explicit about matters that regard the perception of the Ottoman history in the school curriculum after the educational reform in 1999.

An important part of the curriculum, the school syllabus has suffered an updating process lately, gaining a new vision on objectives, topics, learning activities and evaluation methods. The process of elaboration started in 1994/1995 but the reform was completed only in 1999.As a consequence, methodology suffered a revolutionary change in the case of many school subjects, history included. In this context, the contents carry more weight, they are seen as means for creating general competencies and attitudes, so necessary for a young person living in a democratically society.

As a consequence of the educational reform in 1999, History as a school subject is studied starting from the 4th grade. Because at this level the pupils are primary school children, the Romanian history is presented in the form of stories that familiarize the children with basic history notions. At this stage of learning these references to world history and, implicitly, to the Ottoman Empire are only tangential.

Starting with the 5th grade and up to the 7th grade, our students begin to study the world history. As we are concerned, the Ottoman issues are dealt with in the 6th grade textbook. This textbook covers the period between 1000 AD and the Napoleonian wars. In this context, students learn the first notions of Oriental history and terms referring to the Ottoman Porte. Key terms are introduced, for example: the Prophet, caliph, the Koran, Jihad, Shiite, Sunni, Ottoman Empire, Sultan, padishah, expansion, Ottoman rule. There are given some case studies, one of them referring to the Turkish Empire and its expansion in the Balkans.

There are references about the evolution of the Turkish Empire and its rule in the Balkans in almost all the tasks regarding Byzantium, the Islam or the emergence of the Medieval State.

In contrast to the textbooks printed before the 90's, the Ottoman Empire is no longer presented here as an opponent but as part of the European and world history after the year 1300 AD.

The 7th grade textbook presents the evolution of the world history from 1815 up to our days. In these lessons, the Ottoman Empire occupies a distinct unit in the textbook, a unit dealing with the opposition between traditional and modern societies. Here are used historical notions on a given topic,such as: tradition and modernity, Bureaucracy and paternalism. The lesson is structured on the Tanzimat reforms in the case of the Turkish Empire and on the "Meiji Era" in the case of Japan. The Ottoman Empire is also present in the lessons about the Turkish question and of the war between 1877-1878. There are many references as the First World War period is concerned, including a case study entitled "The Oriental Question", some information on the fall of the Turkish Empire, the Constitution from 1878 and the "Turkish Youths" revolution. This revolution is seen as a national movement that marks the struggle for the creation of the Ottoman State with a homogenous nation. Also, the students learn that the "Turkish Youths" trend represents a reaction to European nationalism and Panslavism. There are also references to the Balkan wars in the period after the end of the First World War. In a new case study there are presented the stages of the revolution led by Mustafa Kemal Ataturk, followed by the foundation of the Turkish republic.

As a conclusion to the presentation of the textbooks used in the 6th and 7th grade, we can say that the Ottoman Empire and the Turkish history are very much present in the context of the study of world history.

It seems very important to me the introduction of an extra curriculum for the students in the 6th and 7th grade belonging to the Turkish –Muslim minority. It is structured on two directions: on one hand it refers to the historical evolution of the Turkish society in our country and, on the other hand, it deals with all the essential events in the Turkish history from ancient times to our present days.

The 8th grade is the last level in the secondary school and, consequently, the topics are about the history of the Romanians from past to present. Topics about the Turkish Empire and the Romanian-Turkish relationship are dealt with in the units about medieval and modern history. Even if there was an open conflict between the Romanian Principalities and the Ottoman Porte, the historical key terms, the concepts and the historical topics are treated correctly, so that the Ottomans or the Turkish are no longer described as conquerors or barbarians.

The Turkish- Romanian relationship is presented from the point of view of the Ottoman rule or from the perspective of the terms with the European powers in the context of the Oriental crisis. As an example of a fair-presented material, I can mention the war between 1877-1878 and mostly, the relationship built afterwards between Romania and Turkey as no longer opponents.

During highschool, History as a school subject presents again, with some modifications, the topics treated in secondary school.

Therefore, in the 9th grade the students study world history from ancient times to the beginning of the 16th century; in the 10th grade they study the period between Humanism to the Congress in Wien from 1815; in the 11th grade they continue the study of history from 1815 to our days.

Ottoman topics are also present in a number of case studies: the 10th grade textbook in the unit "European Diplomacy from Raison d'Etat to Balance" has a case study called: "The Turkish Empire and Europe.The Beginning of the Oriental Question". In the 11th grade we have a case study regarding the administration and the reforms of Tanzimat; the 12th grade textbook renews the topics from the 8th grade dealing with the history of the Romanians, but at a higher level.

The Ottoman Empire and the Turkish- Romanian relationship are presented in the same accurate manner, according to the historical truth. There are several case studies about the Ottoman- Romanian relationship, the Turkish question and about the evolution of the terms between Turkey and Romania after 1878 and mostly after 1923.

From my description of the school curriculum one conclusion can be drawn, namely that the Romanian pupils can now have an accurate perspective on Turkish history and on the strong connections between the two nations, learning the fact that nowadays we have a good and friendly relationship between the two countries.

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LOGISCHES UND PSYCHOLOGISCHES IM LERNPROZESS

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ABSTRACT. The article ***"Logical and Psychological in the Learning Process"*** is focused on the problem of the structure of the teaching process. It begins with the structure of the various disciplines to continue with the logical and psychological organisation of the substance that is to be taught. Here it studies the different theories of organisation, teaching and the connections between these two things. There is a logical and a psychological organisation and there must be used in the teaching process so that the student benefits most from it. In order to be able to do this a teacher must be aware of the logical operations of teaching and how they are interacting with each other. The logical operations and the connections and interdependences between those are enumerated in order to show the usefulness of their knowledge and understanding for the process of teaching. Also there are enumerated the common errors that are to be avoided in the practice of argumentation. In the end there are some considerations from this point of view about the practice of teaching in Romania.

Was für einen Einfluss sollte die Logik auf die Erziehung haben? Diese Frage umreisst einen wichtigen Sektor der Aufgabenstellung der Erziehung, da nicht alles auf einmal gelernt werden kann, und deshalb müssen die Inhalte der Erziehung in einer gewissen logischen Ordnung stehen.

Wenn die Inhalte der Erziehung logisch geordnet sind, dann unterwerfen sie sich einer Hierarchie der Prinzipien und Konzepte, die als ein Teil des Faches selbst vermutet werden. Generell sind die Kenntnisse in einer Anzahl Fächer gruppiert, welche sowohl ein Erkenntnisgebiet als auch eine Art der Erkenntnis darstellen. Jedes Fach enthält eine bestimmte Denk-, Denkunhre oder Weltanschanung, die sich im Laufe der Zeit bewährt hat. Mit dem Fortschreiten der Erkenntnis öffnen sich der Untersuchung neue Felder und, dort wo sich die schon vorhandenen Methoden nicht ausbreiten können, werden neue Fächer definiert. Manchmal passiert es auch, dass schon vorhandene Fächer aufgegeben werden, wie z.B. die Naturphilosophie oder die Alchemie. Man müsste also sagen, dass die Fächer, oder wenigstens einige von ihnen, nicht ewige Denkmuster darstellen, obwohl es schwer zu denken ist, wie wir uns der Mathematik oder dem Sprachstudium entledigen könnten. Sie stellen Untersuchungsformen dar, die sich im Laufe der Zeit als die effektivsten bewährt haben, obwohl oder gerade, weil sie jederzeit erneuert werden können.

Die ganze kulturelle Erfahrung bestätigt uns in der Aussage, dass die theoretischen Fächer die beste Methode des Gewinnens und der Organisierung der Kenntnisse sind. Aus dieser Erfahrung heraus können wir die Prämisse stellen, dass die Lernenden, die in diesem Rahmen aufwachsen, die Kenntnisse dann am besten aufnehmen werden, wenn sie die Methoden, nach welchen diese Kenntnisse gewonnen worden sind und die Strukturen nach denen sie organisiert wurden, analysieren.

Um sich also die Kenntnisse anzueignen und verwenden können, müssen diese im Rahmen des Lernprogramms, ähnlich wie in den theoretischen Fächern angeordnet sein. Sie bleiben die Hauptdeterminante, auch wenn wir nicht behaupten können, dass sie die ideelle Lernreihenfolge wären. Im schulischen Lernprozess muss man auch andere Faktoren in betracht ziehen, wie z.B. die psychologischen, den Reifegrad des Schülers, seine Fähigkeiten und seine Motivation. All diese sind Faktoren, die nach dem Schema der Konditionierung wirken, und diese im Bezug zum Hauptcharakter des Faches setzen.

Im Rahmen jedes Faches sind die Kenntnisse logisch oder pseudologisch organisiert. Das Fach hat eine logische Struktur, wenn die Elemente des Faches deduktiv in Bezug zu einander stehen, so wie es in der Mathematik der Fall ist. In anderen Fächer, wie z.B. die Sozialwissenschaften, können die Kenntnisse nach ihrer "Erklärungskraft" geordnet werden. Für die Sozialwissenschaften sind bestimmte Ideen bedeutender, weil sie einer weniger bedeutsamen Ideenmenge Sinn verleihen. In der Philosophie würde man z.B. von den Prinzipien höchster Verallgemeinerung sprechen, durch die anderen Begriffe eine Ordnung finden. In solchen Fächer kann der Unterrichtsstoff pseudologisch, nach der Erklärungskraft geordnet werden. Die ausführlicheren Informationen jedes Faches können dann in Bezug mit der Leitidee unterrichtet werden, die sie am besten erklärt. Der Schüler wird sich zuerst diese Ideen in einer vereinfachten, schematisierten Form aneignen, um sie dann im Laufe des Studiums zu vertiefen.

Wie sollen also solche Fächer wie Geschichte, Philosophie, Literatur für den Unterricht strukturiert werden, da sie keine exakten Wissenschaften sind, aber trotzdem Basisunterrichtsfächer in der Gesamtzeit der Schule?

Es existiert in der Schulpraxis die Angewohnheit der Vertrautmachung der Schüler mit bestimmten Grundthemen, aber solche Grundthemen sind keine Begriffe, die andere Begriffe erklären oder begründen, was man in einer pseudologischen Anordnung erwarten würde. Obwohl einige allgemeinen Ideen am Anfang eingeführt werden können, um dann an Tiefe zu gewinnen, scheint die Lernreihenfolge von psychologischen Betrachtungen geprägt zu sein. Zur Veranschaulichung werden wir das Studium der Philosophie im Gymnasium benutzen, wo zuerst das Problem des Mensches zestellt wird und erst später die des Seins. Im Laufe des Fortschreitens im Unterrichtsstoff werden dann Probleme wie: Beziehung Mensch-Sein, Erkenntnis, Freiheit, untersucht.

Um eine Verallgemeinerung vorzunehmen können wir behaupten, dass die Geisteswissenschaften alle einen Kern von Grundideen besitzen. In den Geisteswissenschaften sind die Ideen pseudologisch geordnet, d.h. einige von ihnen stellen die Basis dar, durch welche die anderen verstanden werden können.

Ein logisches Lernmodell wird uns von der humanistischen Kultur vorgestellt. Diese schlägt erstens eine Hierarchie vor, eine Einordnung unserer Begriffe, die die Existenz einiger eingliedernden "allgemeinen Begriffe" voraussetzt, wie z.B.: Sprachgebrauch, Aneignung der Schrift, Elemente des rationalen Denkens, die Fähigkeit das Definierte durch die Definition zu ersetzen, einige allgemeine Ideen über das Universum, usw.

Gegenüber diesen "allgemeinen Begriffe" stellen sich die "sekundären Begriffe", die mit ihnen verbunden sind. Eine Wahrnehmung wird also auf ein Kenntnisnetzwerk mit einer perfekt definierten "Textur" bezogen, eine "Textur" die Haupt-, Sekundär-, Tertiärlinien usw. vorweist, die so vernetzt sind, dass sich Kenntnisknoten bilden, oder Kreuzbegriffe, wie sie Bellin Milleron benannt hat, Begriffe denen wir im Laufe des Denkaktes immer wieder begegnen. Die cartesianische Struktur der Erkenntnis zeigt uns einige Wege: "teilt die Gedankenwege in Elementenketten, die alle einfach und leicht, alle einleuchtend sind", also "reduzieren wir einen bestimmten Gedankenweg zu einem Muster, zu einer allgemeinen Struktur, zu einer beliebigen Zahl von Elementen". Dieser Erkenntnishintergrund auf dem sich unsere Wahrnehmungen projizieren, kann dann durch ein spinngennebeähnliches Netzwerk, welches in Bezug auf verschiedene Mittelpunkte immer perfekt geordnet bleibt, dargestellt werden.

Der Zweck des humanistischen Studiums, der humanistischen Erziehung, aus derer Erbschaft wir immer noch leben, war die Bereitstellung verschiedener Methoden des Verstehens eines Begriffes auf möglichst einfachem Wege. Von einem Punkt angefangen, verbindet sich die Idee, die Wahrnehmung, die Tatsache mit irgendeiner anderen, dann wieder mit einer anderen, um sich dann mit den Kreuzbegriffen zu treffen, die schon unter sich durch eine stabile Struktur verbunden sind. Das humanistische Denken erlaubte die Erfassung einer Struktur beginnend von dieser Ortung, dieser "Topologie" der Erkenntnis. Aus dieser Ansicht wuchs eine pädagogische Methode heraus, die behauptete, dass wenn man einen kultivierten Menschen erhalten will, dann muss man ihn einige Allgemeinbegriffe, die Kreuzbegriffe, lehren: geometrische Prinzipien, Latein-, und Fremdsprachenelemente, grosse philosophische Ideen. Er wird damit mit einem Ariadnefaden, einem Rezept, ausgerüstet sein, welches ihm erlauben wird die Ereignisse zu verstehen, abzuwägen, zu messen, einzuordnen, letztendlich ihnen ihren vorausgesehenen Platz zu weisen.

Welche sind die Faktoren, die die Lernfähigkeit des Schülers beeinflussen?

Die ***biologische Reife*** ist einer von ihnen. Der Schüler kann bestimmte Sachen nur dann bewältigen, wenn sein neurologischer und Fortbewegungsapparat genügend entwickelt ist, um ihm das zu erlauben. Sein Reifeniveau zeigt uns sein wahrscheinlicher Lernfähigkeits- und Geschwindigkeitsgrad zu einem bestimmten Zeitpunkt.

Die ***Vorkenntnisse*** des Schülers sind ein anderer Faktor. Der Schüler kann biologisch imstande sein, bestimmte Kenntnisse zu erlernen. Trotzdem ist er psychologisch dessen nicht fähig, da ihm gewisse Vorkenntnisse fehlen. Dieser

Mangel ist psychologisch ausgedrückt, aber eigentlich ist es ein logischer, da dem Schüler unvermeidliche Ideen fehlen, die zur Bedeutung der zu erlernenden Begriffe notwendig sind. Ideell müsste die Lernkurve geradlinig und ständig anwachsend sein. Jeder Schritt vorwärts in der Erkenntnis muss mit den Vorkenntnissen harmonieren. Dieser muss genügend Neuigkeit besitzen, um den Schüler zu motivieren, aber nicht zu fremd, damit die Möglichkeit der Anknüpfung an den Vorkenntnissen bestehen bleibt. Die Kombination der Vorkenntnisse mit dem Reifegrad wird normaler weise "Vorbereitungsgrad" genannt. Ein Schüler ist dann bereit, etwas zu lernen, wenn seine physische und psychische Entwicklung, sowie seine Vorkenntnisse ihn auf das Verstehen bestimmter Kenntnisse ansetzen. Wenn ihm Kenntnisse vorgelegt werden, für die er nicht vorbereitet ist, wird er sie entweder nicht verstehen oder zwar verstehen aber mit grosser Mühe. Wenn diese Kenntnisse dem Schüler zu spät vorgelegt werden, werden die auf ihnen gründende Erkenntnis sowie seine Entwicklung als Individuum verschoben. Der Vorbereitungsgrad ist aber nur ein Orientierungswert für den Lernprozess, da auch Ausnahmen bestehen, was zur Berücksichtigung anderer Faktoren führen muss.

Einer dieser zusätzlichen Faktoren ist die ***Motivation***. Wenn ein Schüler etwas lernt, was er erkennt und/oder einsieht, wird er besser und schneller lernen. Die Lerngründe können aus momentanen psychischen oder umweltbedingten Zuständen entstehen. Die Motivation kann durch Belohnung oder Strafe stimuliert werden, aber diese Art der Motivationsunterstützung ist oberflächlich und kann zu konstanten positiven Lernergebnissen nur durch einen Glücksfall führen. Die eigentliche grundlegende Motivation (z.B. die fortwährende Beschäftigung mit der Philosophie) entsteht aus der sich entwickelnden Persönlichkeit des Jugendlichen. Im Laufe ihrer Erscheinung und Bekräftigung legen sie Grundrichtungen für seinen weiteren Studiengang.

In 20. Jahrhundert waren die bedeutendsten Vertreter der psychologischen Lernentwicklung die Progressivisten, deren Standpunkt am besten von John Dewey vertreten wurde. Seiner Meinung nach muss der Schüler psychologisch lernen beginnen, den eigenen Interessen entsprechend, um danach logisch und der Fachstruktur entsprechend zu lernen. Die psychologische Reihenfolge muss zur logischen führen und sie letztendlich erleichtern. "Anstatt antagonistisch zu sein, sind sie (die psychologische und logische Reihenfolge) aneinander, als Anfangs- und Endphasen, im Rahmen desselben Lernprozesses gebunden". [Dewey 1933, 79] Desto mehr ein Schüler etwas lernt, umso mehr ist er imstande, es mit spezifischen Mitteln anzugehen. Durch seine Natur, sagt Dewey, ist der Intellekt logisch, aber er muss sich dazu entwickeln. Wir müssen den Schüler als Ganzes erkennen, indem man diesen dazu bringt, die Fächer schrittweise logisch zu lernen. Wir können sicher sein, dass sich letztendlich die psychologische Lernreihenfolge in eine logische umwandelt, weil der Intellekt des Schülers sich natürlich zur Logik entwickelt.

Weil die logische Reihenfolge, die des Experten ist, wird sie vom Anfänger nicht geschätzt. "Aus dem Sichtpunkt des Schülers ist die wissenschaftliche Form (die logische Form) ein Ideal, das zu erreichen ist, und nicht der Anfangspunkt".

[Dewey 1916, 256]. Um diese Strukturierung zu erkennen muss der Schüler mindestens mit den wichtigsten Eigenheiten des Inhalts Kontakt nehmen. Wir können nicht erwarten, dass ein Schüler ein Fach in einer Strukturierung lernt, die nur für einen Fachmann Sinn ergibt.

Das Lernen muss an den Vorkenntnissen und Erfahrungen des Schülers anknüpfen. Der Lerninhalt muss daher so strukturiert werden, damit er den Lernnotwendigkeiten und –bedingungen des Schülers entspricht. "Der Lernprozess muss an dem Interesse der ganzen Schulklasse anknüpfen, während der Lehrer das Gespräch so leitet, damit es zu einer Frage führt, dass die Schüler anspricht." [Dewey 1972, 72] Die Lernmethode in der psychologischen Phase ist dieselbe wie in der logischen, nur wesentlich einfacher. Diese Methode ist die Problematisierung. Der Unterschied besteht in der Art und Komplexität der Fragestellung und des benutzten Materials.

Dewey verwirft die formalistische Einstellung, wonach die Logik das Studium des Denkens als Produkt und nicht als Prozess sei. Er behauptet, dass die Grundsätze der Logik beide Aspekte ansprechen und dass das logische Denken das ist, was eine Fragestellung erfolgreich löst. Daraus folgt, dass, wenn das logische Denken ein Problem löst, auch die dafür erforderlichen Kenntnisse logisch strukturiert sind. Es besteht die Möglichkeit einer Rückkopplung des Logischen und Psychologischen in einem allgemeinen Sinne, in welchem sich die psychologische Lernreihenfolge durch die Entwicklung der logischen Denkfähigkeit des Schülers in einer Struktur umwandelt, die dem logischen Aufbau des Faches selbst entspricht. Dies ist der Fall, sagt Dewey, in welchem die Lernreihenfolge zugleich logisch und psychologisch ist: logisch, weil sie der logischen Struktur des Faches entspricht, und psychologisch, weil der Schüler reif und bewusst ist, um den Inhalt mit seinen eigenen Begriffen zu verstehen. Deshalb sind die Kenntnisse, schulische Erziehung und Reife im selben Maţe notwendig: die Reife erlaubt dem Schüler das logische Denken, die schulische Erziehung bringt ihm die fortwährende Übung des logischen Denkens, während die Kenntnisse ihm erlauben, die logische Struktur des Faches einzusehen.

Theorien der Lernreihenfolge

Indem man annimmt, dass keiner der oben angeführten Faktoren ausschlaggebend in der Erklärung der Lernreihenfolge ist, werden wir des weiteren die wissenschaftlichen Richtungen untersuchen, die ein Gleichgewicht zwischen ihnen schaffen wollen. Zusätzlich werden wir diese näher untersuchen.

Eine wissenschaftliche Richtung behauptet, dass das Wichtigste eines Faches, in einer oder anderen Form, in jedem Alter erlernt werden kann und dass deshalb der logischen Reihenfolge keine psychologischen Standpunkte im Wege stehen. Der Zugang zu diesen Ideen sei durch das Alter des Schülers und von der Anpassung dieser Ideen an die Lernfähigkeit des Schülers bedingt. Daher kann die Lernreihenfolge mit der Struktur der Kenntnisse übereinstimmen.

Die Aneignung der logischen Operationen ist allerdings strenger vom Reifegrad bedingt. Diese Operationen können vereinfacht werden, aber nicht auf einer Weise, die die psychologischen Schranken beseitigt, die aus ihrer altersbedingt fehlerhaften Aneignung entstehen. Daraus folgt, dass die Lernreihenfolge psychologisch determiniert werden sollte; anstatt die komplexen logischen Operationen dem Schüler anzupassen sollte man ihr Lernen hinausschieben, bis der Schüler für deren Verstehen bereit ist. Die Lernreihenfolge ist also logisch, weil jeder Leitbegriff zuerst allgemein gelernt wird; sie ist auch im selben Masse psychologisch, weil die Kenntnis der Leitbegriffe dem Schüler erlaubt, jede neue Stufe der Erkenntnis ohne unnötiges Anstrengen zu bewältigen.

Es scheint, dass das Lernen der Grundbegriffe des Faches in ihrer logischen Reihenfolge eine psychologische Notwendigkeit befriedigt, da eine grundlegende Übereinstimmung zwischen der logischen Struktur der Ideen eines Faches und ihrer psychologischen Anordnung im Kopf der Schüler besteht. Diese Übereinstimmung wird dadurch erklärt, dass sowohl das Fach als auch der Intellekt die Begriffe in einer Hierarchie des Fassungsvermögens ordnen: so wie die Begriffe eines Faches nach ihrem Erklärungsvermögen geordnet werden können ist auch der Schüler besser darauf vorbereitet, sich neue Begriffe anzueignen, wenn er diese den übergreifenden, im Voraus gelernten Begriffen unterordnen kann.

Gemäss der anderen wissenschaftlichen Richtung, ist das menschliche Nervensystem so gebildet, dass neue Informationen und Ideen nur dann verinnerlicht werden können wenn sie unter den Vorkenntnissen eingeordnet werden können. D.h. der Schüler ordnet den Inhalt eines Faches in einer Hierarchie, in welcher die übergeordneten Begriffe andere, untergeordnete, Begriffe einschliessen. Die Art in welcher der Schüler psychologisch ein Erkenntnisbereich ordnet, ähnelt der (pseudo-) logischen Anordnung des Faches.

Es existieren aber zwei Gründe weswegen die geistige und die Fachordnung nicht genau übereinstimmen können. Eines ist die Tatsache, dass, im Unterschied zum Fachinhalt, der angeeignete Inhalt vergessen werden kann. Die Angewohnheit der Unterordnung selber, die das rationale Lernen fördert, trägt zum Vergessen bei. Der Verstand behält eher einen allgemeinen Begriff, als die Menge partikulärer Begriffe deren Sinn sich dem allgemeinem Begriffe unterordnet.

Der zweite Grund besteht in der Tatsache, dass der Schüler sich das Problem der Struktur des Faches nicht stellt, bis die Kenntnis eines Faches genügend komplex ist. In den Frühen Phasen des Lernens ist seine intellektuelle Anordnung bei weitem weniger einheitlich als die logische Struktur des Faches.

Diese wissenschaftliche Richtung unterscheidet auch zwischen zwei Arten der Unterordnung welche in dem bedeutenden signifikattragenden Lernen erscheinen, und welche eine logische oder pseudologische Anordnung erlauben. Die abgeleitete Unterordnung erscheint wenn der erlernte Stoff einem, im voraus erlernten, Oberbegriff, den es erläutert, unterstützt oder verdeutlicht, untergeordnet wird. Ein solcher Stoff ist leicht zu erlernen aber auch zu vergessen. Dank seiner Ähnlichkeit mit

dem Oberbegriff ist er aber auch leicht wiederhergestellt. Die korrelative Unterordnung erscheint, wenn der gelernte Stoff Vorkenntnisse erweitert, verbessert oder qualifiziert. Er wird den Vorkenntnissen einverleibt aber ihr Sinn ist den Vorkenntnissen nicht gleich, also werden sie nicht ganz unterordnet.

> "Auch dieser Stoff strebt dem Vergessen zu, wie jeder andere, leider kann er aber nicht wiederhergestellt werden da sein Sinn den Oberbegriffen nicht ganz unterordnet ist. Daraus folgt, dass der korrelative Stoff einmal vergessen auch für immer verloren ist." [Kneller 1973, 103]

Eins der grossen Probleme des Unterrichtes jedes Faches ist auch die Verringerung der Vergessensgeschwindigkeit der korrelativen Inhalte.

Die Aufgabe der Gleichgewichtserhaltung der logischen und psychologischen Notwendigkeiten in der Lernreihenfolge ist ein komplexes Problem welches ständige Übungen und Aufgabenstellungen erfordert. Eins ist jedenfalls klar: Je besser wir diese Notwendigkeiten kennen, desto wahrscheinlicher ist es, dass ihr jetziger Gleichgewichtszustand besser ist als in der Vergangenheit.

Welche könnten die wichtigsten Folgen sein, die aus den oben angeführten Theorien zu ziehen sind?

1. Eine Richtung wäre die Notwendigkeit der Vorstellung der wichtigsten Oberbegriffe durch den Lehrer, welche abstrakter und allgemeiner, also umfassender, als der erlernte Stoff sind. Die Funktion dieser Oberbegriffe für den Schüler besteht in der Einordnung ausführlicheren Stoffes und der Erleichterung der Erkennung verwandter Begriffe. Wenn der Stoff ganz neu ist, muss der Oberbegriff zur Erkennung benachbarter Oberbegriffen dienen. Wenn der Stoff einigermassen bekannt ist, muss der Oberbegriff in einem vergleichenden System benutzt werden, damit der Schüler den Stoff richtig unterordnet und ihn von anderen Oberbegriffen, mit welchen er verwechselt werden könnte, unterscheidet.

2. Eine andere Richtung wäre die Vorstellung der Leitbegriffe nach ihrem Fassungsvermögen. In dieser Weise würde die geistige Vorstellung der Fachreihenfolge entsprechen. Die Leitoberbegriffe müssen vor dem ausführlichen Stoff vorgestellt werden. Die untergestellten Oberbegriffe und der damit zusammenhängende ausführliche Stoff müssen dann abwechselnd gelehrt werden, damit sie progressiv unterschieden werden.

Bevor ein neuer Stoff unterrichtet wird muss der alte gefestigt werden. Wenn die Vorkenntnisse nicht gut genug feststehen, werden sie auf neue Lernsituationen nicht übertragen werden können.

Die geistige Verbindung zwischen Oberbegriff und dem mit ihm zusammenhängenden Stoff ist auch sehr wichtig. Wenn dieses der Fall ist, dann wird jede neue Lernsituation im Idealfall eine Menge bedeutender Vorkenntnisse des Schülers implizieren. Auf dieser Weise kann man zu sparsamen Lernmethoden kommen, zur Vorbeugung der Vereinsamung von Begriffen und der ziellosen

Vervielfachung von Termini die ein und dieselbe Idee darstellen. Auch kann man auf dieser Weise die Unterscheidungsreaktion der wirklichen Unterschiede zwischen neuen Ideen und schon bekannten, aber mit diesen verwandten, beschleunigen.

Eine Bemerkung ist noch notwendig: die oben angeführten Richtungen beziehen sich nicht auf das erfinderische oder kreative Lernen. Sie untersuchen nicht die Idee der Vertiefung der Kenntnisse durch reflexive Prüfung und periodische Erneuerung der Begriffe.

Logische Operationen im Unterricht.

Die logischen Operationen, die im Unterricht zu bemerken sind, sind allgemein und nicht alle unbedingt logisch.

Die Folge. Der Unterricht nimmt oft die Form eines Gespräches zwischen dem Lehrer und der Gruppe, wobei der Lehrer der Hauptgeschprächspartner ist. Es besteht besonders aus Operationen wie Definierung, Klassifizierung und Demonstration. In diesem Gespräch können wir Monologe unterscheiden (normalerweise von den Lehrern gehalten) und Dialoge oder "Folgen". Eine "Folge" kann (nach Kneller) als ein verbaler Übergang zwischen zwei oder mehreren Gesprächspartner der sich auf ein Subjekt bezieht, definiert werden. Jedes mal wenn sich der Gesprächsschwerpunkt verlagert beginnt eine neue "Folge". Die Reihenfolge der "Folgen" verfolgt das langsame Vorschreiten in den Stoff, so dass die Vorkenntnisse aktiviert werden und zwischen diesen und dem neuen Stoff Verbindungen hergestellt werden.

Einleitungen. "Jede Folge wird durch eine verbale Operation eingeleitet, normalerweise eine Frage, die als Einleitung bekannt ist" [Kneller, 1973, 121]. Diese verbale Operation verlangt eine logische Antwort. Wenn die Einleitung eine Frage nach dem Sinn eines Wortes ist, dann wird die Antwort wahrscheinlich ein Definitionsversuch, oder eine Regel die den Gebrauch des Wortes betrifft. Wenn die Einleitung eine Erklärung verlangt, dann werden die Antworten Argumente oder Beschreibungen sein. Die Einleitung bestimmt nicht im Voraus die logische Struktur der Folge da der Antwortende, (normalerweise der Schüler) die Folge falsch verstehen kann, (wenn sie zweideutig oder unklar ist), oder er ist nicht imstande die richtige Antwort zu nennen. Ein erfahrener Lehrer wird ausserdem grosse Abweichungen von den logischen Anforderungen der Einleitung hinnehmen, da er der Meinung ist, dass die Schüler kreativer denken wenn sie weniger eingeschränkt sind.

Wir verstehen also, dass jede Folge eine ideelle logische Struktur hat, nach den logischen Anforderungen die eine Einleitung stellt. Diese Struktur ist ideell, da sie in der Lehrpraxis von dem tatsächlichem Dialog höchstens umschrieben wird. Wir wissen, dass der Lehrer sich an der logischen Struktur vergleichen muss, aber wir wissen auch dass er nicht nur die Lauterkeit sondern auch das Leben und die Dramatik eines Dialogs verfolgt. Unter dem Standpunkt der verständigen Mitteilbarkeit der Kenntnisse bleibt die Logik das wichtigste Kriterium in der Ausübung jeder Einleitung und Folge. Im Rahmen des Unterrichtes wurden zwölf

verschiedene Formen von logischen Operationen identifiziert. Einige davon können als pur logische angesehen werden, wie z.B. die Definierung und die Klassifikation. Andere sind nur in dem Sinne logisch als sie intellektuelle Operationen darstellen die im Lernprozess mitwirken.

Die Definierung ist eine der am meisten anzutreffenden logischen Operationen. Es existieren mehrere Formen der Definierung, von welchen die Definierung durch die nächste Gattung und artbildenden Unterschied die häufigste ist, da man durch sie die Gattung oder Kategorie, welcher das "Objekt" angehört, angibt. Ausserdem wird angegeben, auf welcher Art sich das zu definierende Objekt von den anderen derselben Klasse unterscheidet.

Manchmal wird von den Schülern eine ***Beschreibung*** eines Phänomens, Prozesses oder Objektes verlangt. Solche Einleitungen sind unklarer, da man nicht immer unterscheiden kann, ob sie eine Beschreibung oder eine Identifizierung verlangen.

Die Bezeichnung oder ***Identifizierung*** bedeutet eine Benennung durch ein Wort oder Symbol. In einer Einleitung durch Bezeichnung beschreibt oder weist der Lehrer auf etwas hin, um dann den Schüler anzufordern, dieses Etwas zu Benennen. Die Einleitung kann im diesem Fall eine Menge von Formen bekleiden: dem Schüler kann verlangt werden ein oder mehrere Beispiele derselben Klasse zu nennen, alle Mitglieder einer Klasse zu identifizieren, etwas zu benennen, usw.

Die Assertion oder ***Bestimmung*** erscheint dann, wenn eine Einleitung mehr als eine Benennung oder Beschreibung verlangt. In der Form unterscheidet sich die Assertion wesentlich von der Beschreibung. Eine Einleitung zur Assertion (eine Nachfolge, ein Thesensatz, eine Schlussfolgerung, eine Meinung oder ein Begründungsschritt) verlangt vom Schüler eine bestimmte, objektive, kurze und klare Vorstellung. Wir müssen aber auch die deskriptive Einleitung in betracht ziehen, wenn der Schüler eine gewisse Freiheit geniesst und in seinen eigenen Worte antworten kann.

Die Erzählung. Einleitungen in Erzählform verlangen Informationen über den Inhalt eines Buches oder Dokumentes für eine Berichterstattung oder Inhaltsangabe. Ihres Zweckes unbeachtet, muss eine Erzählung kurz, klar und der Quelle treu sein.

Die Substitution ist eine symbolische Operation, die zur Heraushebung der Eigenschaften eines Objektes im Vergleich mit einem anderem, schon bekannten, das derselben Klasse angehört, dient. Diese einleitende Übung trägt zur Mobilität des Denkens des Schülers, sowie der Kenntnisfestigung bei.

Die Evaluation. Die evaluierenden Einleitungen verlangen vom Schüler die Einschätzung der Gültigkeit, des Wertes, der Angemessenheit eines studierten Objektes, Prozesses, Aktion, Geschehnisses, usw. Die Entscheidung über die Angemessenheit oder dem Wert kann durch die Diskussion einer Werteskala, oder durch aufeinanderfolgende Läuterungen und anschliessende Schlussfolgerung, die explizit oder nicht von Argumente begleitet wird, gefällt werden.

Die Meinungsäusserung. Eine Einleitung dieser Art verlangt dem Schüler eine Meinungsäusserung, indem man aber weiss, dass der Schüler keine komplette Informationen über das studierte Phänomen besitzt, weder über seine Evolution noch

über seine Verbindung mit anderen Phänomene. Die Meinungsäusserung begünstigt die eigene Beurteilung und den Mut der Äusserung der eigenen Meinung.

Die Klassifikation. Eine Einleitung dieser Art verlangt dem Schüler die Reduktion eines Beispiels zu der grösseren Objektklasse, der angehört. Sie hat eingliedernde Wertigkeit, trägt zum schnellen Lernen bei, sowie zur Festigung der Vorkenntnisse.

Das Vergleichen und die Entgegenstellung. Bestimmte Einleitungen verlangen dem Schüler einen Vergleich zweier oder mehreren Sachen. Sie verlangen einen Vergleich ohne die genauen Punke die verglichen werden müssen anzugeben. Oder sie können auch anzeigen wie zwei oder mehrere Dinge sich im einem und demselben Punkt ähneln oder nicht. Andere Einleitungen können ein Objekt benennen und dem Schüler verlangen ein anderes zu nennen, entweder anders, ähnelnd oder verschieden.

Die bedingte Schlussfolgerung. Die Einleitungen dieser Art verlangen dem Schüler das Finden einer Konsequenz einer schon vorgetragenen Antezedenz. Die Antezedenz ist der Ausdruck, der sich auf eine Bedingung oder Tatsachenstellung bezieht, dessen Effekt eine andere Bedingung oder Tatsachenstellung ist, die demgemäss ausgedrückt wird. Einige bedingte Schlussfolgerungen beinhalten auch die Antezedenz auch die Konsequenz und verlangen deshalb vom Schüler die Konsequenz zu bejahen, zu verneinen, oder zuzugeben, dass er diese Konsequenz nie geprüft hat.

Der Vortrag vermutet den Ausdruck der vorherigen Bestimmungen dessen Folge das Objekt des Vortrages ist. Er verlangt Regelformung, Definitionen oder Tatsachen um Entscheidungen, Urteile, Fakten zu begründen. Die erläuternden Einleitungen erwähnen eine besondere Konsequenz und verlangen dem Schüler eins ihrer Antezedente.

Nach dem Antezedent, der für die Erklärung der Konsequenz benutzt wird können die erläuternden Einleitungen folgenden Typ sein:

1. Die Erklärung durch den Mechanismus, wo die Einleitung die Benennung einer Aktion oder eines Geschehnisses ist, die der Schüler dann erklären muss indem er das Zusammenwirken der Elemente einer Struktur erklärt.

2. Die kausale Erklärung, wo vom Schüler eine Beschreibung der Zustände verlangt wird, deren Effekt das zu besprechende Geschehnis oder Phänomen ist.

3. Die konsekutive Erklärung verlangt die Aufzählung der Momente die zu einen Geschehen, Phänomen geführt haben.

4. Die verfahrende Erklärung verlangt die Beschreibung der Schritte oder Operationen die nötig sind, um etwas zu erreichen.

5. Die teleologische Erklärung, wo die Erläuterungen für die Rechtfertigung eines Zieles gerichtet sind oder nur unter Zuhilfenahme eines Zieles zu verstehen sind.

6. Die normative Erklärung. Die Einleitung kann eine von zwei Formen haben. Erstens kann sie ein Urteil, eine Schlussfolgerung oder Information benennen, um dann dem Schüler eine Begründung durch Definition oder Eigenschaft, oder beides zu verlangen. Zweitens kann eine solche Erklärung eine Aktion, Wahl oder Entscheidung

benennen, um dann vom Schüler eine Regel (normalerweise grammatische oder mathematische) zu verlangen.

Die Folgen, mit einer oder mehreren Einleitungen, sind zum Teil mit den Inhaltsteilen symmetrisch, die in jeder Lehrskizze vorhanden sind: sie stellen die logische Vorgehensweise des Lernens dar und verfolgen ein progressives Fortschreiten in dem Lerninhalt, sowie die Aktivierung der Vorkenntnisse und eine optimale Verknüpfung zwischen ihnen und den neuen Kenntnissen. Die Folgen sprechen die logischen Operationen des Lernens direkt an, ihre Typologie und Struktur, und sie betreffen auch den Lehrer wie auch die Schüler. Im Unterschied zu den Folgen, zeigen die Sequenzen durch ihre Inhalte die logischen Operationen die in den Unterricht erscheinen werden.

Man kann auch einen Vergleich anstellen zwischen den Einleitungen und der Operationalisierung der Ziele. Wie es bekannt ist bezieht sich die Operationalisierung der Ziele auf die Aktivität der Schüler und beschreibt Verhaltensweisen die beobachtbar und messbar sind. Die Einleitungen nehmen bezug sowohl auf die Aktivität des Lehrers als auch auf die des Schülers.

Wie kann die Kenntnis der logischen Struktur des Unterrichtsdialogs zur Erziehungspraxis beitragen?

Dank der Existenz der ideellen Strukturen gibt es einen Richtmass, um den Mass an Logik in jeder Unterrichtsfolge bestimmen zu können. Wenn wir für eine bestimmte Folge die logische Struktur, die uns die Einleitung gibt, kennen, wie auch ihren reellen Ablauf, können wir eine Schlussfolgerung ziehen betreffs des Erfolges des Lehrers in dem Aufbau der logischen Reihenfolge, sowie der Schritte, die er machen muss, um dies zu erreichen. Für die unerfahrenen Lehrer könnten Techniken der Einleitung gut sein, damit der Schüler schnell begreift, welche logische Operation von ihm verlangt wird. Die Ergebnisse würden sich nicht nur in der Informationsübermittlung sehen lassen, sondern auch in der Gewöhnung der Schüler, Kenntnisse alleine logisch zu behandeln. Durch die Heraushebung der logischen Implikationen eines Subjektes kann seine Behandlung kompletter und tiefgehender sein. Auf dieser Weise würden die Kenntnisse der Schüler umfassender und dauerhafter sein.

Wie kann jemand erfahren ob seine oder anderer Denkergebnisse richtig (wenn deduktiv) und sicher (wenn induktiv) sind?

- Ideell behauptet das Verstehen einer Aussage, dass der Schüler die pro und kontra Argumente kennt. Man müsste auch die Implikationen der Aussage in einer bestimmten Lage kennen, sowie die Lagen die diese Aussage implizieren. Man muss auch wissen welche Aussagen dieser Aussage wiedersprechen.
- Die Herausfindung der Unklarheiten aus der Urteilskette. Dafür muss man untersuchen, ob kein Begriff oder Behauptung unklar oder mehrdeutig ist.

- Die Feststellung der Nonkonkordanz der Behauptungen. Dies impliziert, dass die Sinne der Behauptungen kompatibel sind.
- Die Prüfung der Notwendigkeit einer Schlussfolgerung. Das Kriterium ist hier die Beurteilung der Lage, in welcher man die Prämisse akzeptiert aber die Schlussfolgerung ablehnt.
- Die Prüfung der Eigenartigkeit einer Behauptung. Oft ist eine Behauptung zu vage um zu bestimmen ob sie wahr oder falsch ist.
- Die Prüfung der Eigenartigkeit einer beobachtender Behauptung. Eine beobachtende Behauptung ist eine Beschreibung eines Objektes, Prozesses oder besonderen Ereignisses. Aus den Gebieten wie den Naturwissenschaften, Soziologie, usw. kann man viele Regeln der Genauigkeit der beobachtenden Behauptungen ziehen. Die beobachtenden Behauptungen sind sicherer wenn:
    - Der Beobachter dem zu Beobachtendem gegenüber neutral ist.
    - Er genaue Beobachtungstechniken benutzt.
    - Das zu Beobachtende ihm leicht zugänglich ist.
    - Die Behauptung mit anderen verbunden werden kann.
    - Die Behauptung von dem Beobachter gemacht wurde.
- Die Abwägung der Möglichkeit einer induktiven Schlussfolgerung. Es gibt einige Kriterien die eine Schlussfolgerung erfüllen muss, und diese müssen den Schülern bekannt sein. Sie müssen bestimmte konkrete Daten betrachten: je mehr Daten sie haben, desto unwahrscheinlicher wird es, dass diese wiederlegt werden. Eine induktive Schlussfolgerung ist leichter zu akzeptieren wenn sie auf schon geprüften Vorkenntnissen basiert. Sie ist sehr geschwächt wenn sie mit keine wichtigen und reellen Tatsache übereinstimmt. Sie wird bestärkt wenn die konträren Schlussfolgerungen den Tatsachen nicht entsprechen.

Das Studium der richtigen Schlussfolgerungen ist für jeden wichtig, der andere zum Denken bringen will. Die am meisten verbreiteten Denkfehler sind:

- Der genetische Fehler, der ein Versuch darstellt, das Subjekt abzuweisen, indem man seine Ursachen angreift.
- Die falsche Analogie. Eine Analogie ist falsch, wenn das Argument nach welchen sich die Dinge in manchen Aspekte ähneln, auf andere Aspekte derselben Dinge ausgedehnt wird.
- Der Zufall, wenn der Zufall mit der Ursache verwechselt wird.
- Das Argument der Ignoranz. Diese Art von Argumente impliziert nicht unbedingt eine Ignoranz seitens des Aussagers sondern bezieht sich auf Aussagen des Typs: "Keiner hat bewiesen, dass die Schüler eine Verinnerlichungsgrenze der Kenntnisse besitzen, eine solche Grenze gibt es nicht." Aus der Tatsache, dass niemand eine Aussage bewiesen hat, kann man nicht Schlussfolgern, dass ihr Gegenteil wahr ist.

- Das Autoritätsargument. Nicht jedes Autoritätsargument ist unzufriedenstellend. Manchmal benutzen wir eine Autorität um ein Argument zu formulieren. Ein Autoritätsargument ist dann berechtigt wenn die Benennung der Autorität automatisch annehmbare Beweise mit sich bringt. Ein Autoritätsargument ist aber nicht berechtigt, wenn es statt einem Beweis steht.
- Der Bezug auf die Gefühle. Einige Argumente basieren auf Gefühle die mit einem Problem zusammenhängen. Es ist ein Fehler, einen Vorschlag nur deshalb zu unterstützen, weil er einer Person oder Gruppe angehört, ohne das Problem analysiert zu haben.
- Das Wiederholen der Frage. Dies nennt man "Kreisbeweis," weil man anstatt zu einer Schlussfolgerung zu kommen, wieder an den Prämissen angelangt.

Wenn wir ein paar Schlussfolgerungen ziehen wollen über die rumänische Unterrichtspraxis und den Beschäftigungen mit der Bedeutung der benutzten logischen Operationen, können wir folgendes erkennen:

- Eine Interesselosigkeit für logische Operationen, die im Unterricht stattfinden. Der Lehrer beansprucht das Intellekt des Schülers nicht, da er selbst die Technik der logischen Argumentation nicht beherrscht, die das Intellekt mobilisiert und führt. Wenn der Schüler eine Schlussfolgerung zieht, verfolgt der Lehrer normalerweise nicht die logischen Operationen desselben, sondern die Information, die diese enthält.
- Der Schüler ist in seiner intellektuellen Entwicklung gehemmt, da er sich den logischen Operationen, die er durchführt oder durchführen könnte während des Dialogs oder während er ein bestimmtes Fach lernt, nicht bewusst ist. Der Schüler ist auch gehemmt, weil er normalerweise in der Beurteilung der Schlussfolgerungen anderer nicht geschult ist. Obwohl er sich bestimmte Informationen und Lösungsmuster aneignet, kann er oft nicht klar und konsequent denken.
- Es existieren ab und zu Beschäftigungen, was das Training der späteren Lehrer in der Richtung des Lernens der Schritte, betrifft welche in der Diskussionsmoderation unternommen werden müssen, um sich der logischen Reihenfolge der Unterrichtsfolge zu nähern.

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DEVELOPMENT OF COMMUNICATION SKILLS IN THE TEACHING AND LEARNING OF SOCIAL SCIENCES

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ABSTRACT. The exigencies of the New School Curriculum demand shifting emphasis from the quantitative aspects of acquiring knowledge to the formative, qualitative aspects, more precisely to developing skills, without neglecting the theoretical fundaments.

The general and specific skills that the social sciences teachers must develop in their students during the teaching-learning process are based on a set of values and attitudes, among which the will to dialogue and be transparent in one's actions, as well as initiative in the free expression of one's personality stand apart through the importance that they bear for group relations, and situations that require interpersonal communication.

Of the wide range of general skills, we will single out communication skills, or the so-called skills of self-expression.

School documents refer expressly to the correlation between communication skills that the teachers must demonstrate, and the communication skills that they must develop in their students.

In the present article we have approached the topic of developing students' communication skills during the teaching-learning of sociology, without reffering to the degree to which the teachers possess these skills.

Focusing teaching on developing skills

The requirements of training students in the modern school have led to new priorities in the field of educational goals. In the foreground, there is the concern for developing functional skills, considering that a well-founded preparation can only be ensured by an educational system that provides, in addition to a solid information basis, a substantial range of capacities, skills, abilities acquired by learning. This change of perspective is the result of the finding that there is a gap between the predominantly informational preparation, which is considered outdated and non-operant today, and – in extremis – even counterproductive, on the one hand, and the difficult insertion on the labor market of the output of the instructional system. As the need has emerged to reshape education so as to put to better use the pragmatic side of it, from the perspective of it being a public service of major significance, the emphasis was moved to the optimal application of adequate techniques and strategies that would harmonize with the culture of contextualized action and to allow for the checking and validation of the results in terms of goals pointing at

the students' endowment with a structures set of functional competencies, which are valuable from the perspective of social integration. For instance, communication skills will be demonstrated during some instances of current speech:

- In order to express intentions;
- To initiate verbal interaction;
- To share information;
- In descriptive operations;
- In stating desirable tendencies;
- To uncover feelings;
- To prevent action, to counsel etc.

Everyday school practice points at the competent/skilled student as an individual who is able to prove mastery in carrying out a task, showing not what he knows, but rather what he can do using what he knows.

Including knowledge in defining skills is needed as it is understood that no capacity can be functional without informational support. In this sense, teachers aim to focus on the skills that must be developed in their students, and an extremely important aspect is to correlate the content of learning with these skills. Skills are concrete acquisitions of the student, gained through the study of disciplines at a certain level of schooling, or during the entire period of schooling. The aim of shifting focus is clear: to facilitate integration of knowledge, skills, and attitudes in the profile of the authentic citizen. In the specialist literature and in the curricular documents there is reference to two types of competencies that take into account the breadth of the training and development area, i.e.. general skills (defined for each subject matter and developed during a cycle of schooling), and specific skills (derived from the general ones, they are developed during an academic year and are defined for each subject matter). Translating these dichotomies in the field of social sciences must take into account the particular aspects of teaching and learning, namely:

- Each of the disciplines of the social sciences is taught during a separate academic year;
- The manner of approach is modular, during the curricular area "Man and society".

Thus, we can discuss:

a) general competencies, defined by the module of social sciences;
b) specific competencies, defined for each subject matter (logic, psychology, sociology, economy, philosophy, etc) derived from the general competencies and developed during one year of study.

The main types of general competencies that are aimed at through the teaching and learning of social sciences are:

1. knowledge of the major concepts and themes of reflection on humans and society, knowledge of the interdisciplinary articulation through making connections among the already existing knowledge;

2. skills in the acquisition of knowledge (reception, reading, active study);
3. skills of processing, organization and treating of the information;
4. skills of using information;
5. skills of self-expression (communication);
6. ability to relate to and participate in group activities and in social life.

The development of communication skills is an important objective of teaching-learning social sciences, imposed especially by the social exigencies, as we have to take into account the fact that the social system is an organized unit, like the individual, in fact, and what makes this unit stay together is a complicated communications system.

Communication skills make possible the amplitude of educational intervention mediated by the specific teaching language, inserted in the framework of adequate methods and techniques, for the explicit purpose of producing structural modifications in the student's personality, at the affective, cognitive, attitudinal and acting levels. Language, gestures, mimic, figurative acts pertain to symbolic conduct.

Argumentation can be conceived as a set of discursive techniques that involve the effort of construction, and reflection on the language products meant to show adherence, approval based on the understanding of the message, the essence and the capacity to repeat the reasoning as many times as needed, obtaining the same effects or even better ones. The main characteristic of argumentation pertains to the predominantly pragmatic domain, and in this respect we may state that we are interested in not only cognitive adequacy, textual construction or meta-textual reflection, but also in reaching an agreement between inter-textuality and inter-individuality. From the relation between the syntactic dimension and the pragmatic component we aim to reveal the very purpose of using argumentation as a means of professional achievement of the desired model of the complex personality of students, of others, of our own. When we use the set of techniques of argumentation we must always keep in mind the system of "mirrors" that accompanies us at all times: the mirror that we can see ourselves in, as we believe we are, the one in which each "other" can see themselves as we also do it, and the one in which each thinks they are seen by others. Depending on these projections, we build our discourse when we are all in front of the "big mirror" in which we are reflected not only as a physical presence, but also as a projection, as an ideal. This intricate image conceived to suggest the complexity of reality leads us maybe more easily to the conclusion that the most important aspect in inter-individual relations, especially in the professional relation of teaching, is modeling.

After a brief analysis we notice how many variables are left to subjectivity. From a certain perspective, this is not so dangerous, but an unprocessed reason clearly endangers our species, in the long term. I do not believe, either, that we must insist on the importance of the individual's permanent development, be it for him self, or for others (although in some historical periods this has to be done).

Communication is a means of psychosocial interaction, a permanent exchange of messages among the interlocutors, meant to accomplish an inter-human relationship that is durable, for maintaining, influencing or modifying individual behavior or group behavior, within which (positive or negative) responses are expected.

Communication skills and examples of learning activities

Communication skills are translatable in terms of capacities: to receive correctly, to process and evaluate messages, to express a message with one's own means, to argue for the expressed opinions, etc. To these, we should add a critical attitude toward the quality of the messages, in the sense that inconsistencies, incoherence or vulgar language should be avoided.

1. development of the students' capacity to receive oral messages:
   a. To follow detailed instructions in different learning situations;
   b. To identify the key elements in an oral message;
   c. To understand the attitude of the speaker within the received message;
   d. To recognize the positions expressed;

Examples of learning activities:

- Questions about the understanding of the verbal message;
- Exercises to confirm the correct answer;
- Exercises to identify the arguments in a message;
- Simulations and role play;

2. development of the capacity to receive written text:
   a. to recognize the logical connection between the passages of a text that has been read;

Example: Sociology, 11th grade, the chapter entitled ***Order and Social Control***.

Task: Based on the text below, you will:

a) identify the elements that make up social life;
b) reveal the connection between frameworks and values.

"Social reality that is constituted and organizes is located in space, it is not suspended in time, therefore it has continuity as related to the past or, in other words, this reality takes shape in a general framework. Thus, social reality is made up of, and its functioning is dependent on the physical-cosmic environment, on the historical past, even on biological life. This framework, in which social reality develops, will also determine certain values: historical, biological and religious ones." (Petre Andrei, *Opere Sociologice*, vol. I, Editura Academiei R.S.R., p.247).

Communication skills are judged to be formed and developed subsequent to the reception of the message, if:

- the student interprets the text making correlations between the levels: semantic, syntactic and pragmatic (taking into account the logical acceptations of these levels);
- identifies the expressive value of the figures of speech used in the text and understands the richness of the meanings suggested even by a scientific text which involves precision in the use of terms;
- identifies the dimensions of social reality and its values, and manages to correlate them logically in the manner which the author thought of the relation in discussion;
- is capable of conferring new significances to the determinist vision of the author also implying the critical point of view from a personal perspective, with sociological theories in the background that are similar or opposed.

- To obtain from the reading the necessary information in order to carry out a task
- To recognize the stylistic effects of the text
- To identify the conclusion in an argumentative text

Examples of learning activities:

- Analysis and commentary of the text
- Selection and ordering the useful information after reading several paragraphs of a text or several texts;
- Exercises to identify the significance of ways of rendering meaning in the studied text
- Exercises to recognize figurative meaning
- Exercises to identify and argumentatively analyze the structure of a narrative.

3. Development of oral expression skills

a.To participate actively in verbal interactions on different topics

Example: Task: Explain the relationship between the individual and society shown in the figure below

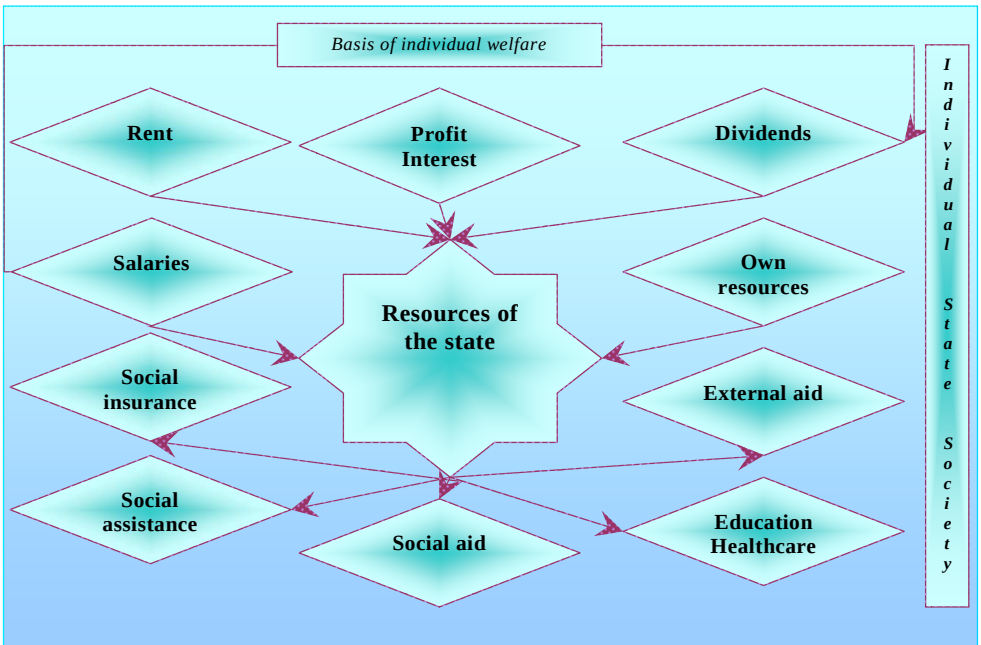

Figure1: Attraction and use of resources by the state

Oral communication skills are judged to be developed if the students:

- are able to build an oral discourse using the elements provided in the figure;
- identify and correlate concepts involved in the figure;
- are capable of supporting with arguments their point of view making reference to the scientific significance of the concepts;
- show tolerance toward the interlocutors' opinions and have a critical attitude in the analysis of the arguments formulated by their peers.
    a. Express clearly and justifiably a personal perspective regarding the issues discussed;
    b. To ask for and provide explanations;

Examples of learning activities:

- Guided/semi-guided conversation (questions and answers), free dialogue, and debates on a given topic, related to a controversial issue;
- Exercises that demand expressing personal opinions / beliefs / feelings;
- Negotiation activities, decision-making through consensus or through compromise, leader elections, etc.
- Opinion poll, inquiries (personal surveys);
- Conflict resolution exercises;

Example: Discipline: Sociology; 11th grade, Chapter entitled ***Interaction and communication***.

Targeted communication skill: argumentation of an opinion / value judgment.

Task: Do you think problems such as: war, unemployment, pollution, life quality could be solved by dialogue? Argue for your position.

The answer must be an oral intervention, containing at least one argument that supports the position upheld. The goal of the intervention is to convince. The time that is available is ten minutes.

The students must take into account: observing the conventions of oral discourse, presenting specific information demanded by the task, explanation, definition, clarification of concepts/ideas involved, adequacy to the level of the audience, organization of ideas, manner of argumentation, power to persuade.

The theoretical premises of the approach are:

- The need to communicate is a natural human characteristic;
- In the communication relation, the individual plays a double role: the knowledgeable subject and the object of knowledge;
- The diversity of the forms of communication has enriched the inter-human relationship and has increased the number of inter-human contacts;
- The means of mass communication are an element of modernity and civilization.

Oral communication skills are judged to be developed if:

- The discourse is convincing, inciting and accurate at the lexical level, the effects on the audience are clear and articulate, the expressions that are used are in the adequate style, the choice of words is personalized: using specialist language harmonized with neologisms in a balanced manner, the discourse is original by the association of ideas and concepts in a personalized, even unexpected manner;
- The discourse uses elements of communication and rhetoric; the rhythm of communication is fluent, showing certainty in the argumentation of ideas, the sequence of sentences is personalized, it captivates the audience through the interesting character of the approach;
- The student organizes his ideas and communicates them after a systematic plan in a personalized manner, the message is clearly formulated and it allows for interesting interpretations;
- The student is capable of presenting valid arguments, in a logical and clear dynamic, the product being an original, optimistic or critical conclusion of the message proposed.

4. Development of the written expression skills:
a). To express opinions on a topic in writing;
b). To write about different topics suggested by the teacher or freely chosen ones;

Examples of learning activities:

- Projects
- Creative writing, either individually or in a group;

Example: Discipline: Sociology, 11th grade, chapter entitled Interaction and communication, subchapter: Interaction as a communication process; the required communication skill: writing a text. The task can be carried out individually or in a group, in which case a distribution of efforts to carry out the task is needed. In this case, the teacher follows the performance of the ad-hoc made up group, the expectations being higher than in the case when the task is solved individually. The teacher must keep in mind that an optimal size group is made up of 5-12 individuals, a 3-4 person group being too little representative for the social reality, and the one over 12 members tending to divide in sub-groups and to work more slowly, according to I. Radu (1994, p. 141).

Task: You are asked to write an article to be published in the newspaper of your school.

The topic of your article is: "The information channel and my life". Your goal is to inform your colleagues about the implications of the digital revolution. It would be good for you to touch upon the following:

- the appearance of the concept; the importance of PCs and the Internet in everyday life; the role of PCs as television and an electronic gateway for cable communication, telephone and satellite; invoked

vision of ex-vice-president Al Gore: all homes will be connected by cable; at present, four separate technologies have distinct ways of access to one's home: telephone, terrestrial emission, cable and satellite; in the future, everyone will navigate the same cable and will own a computer; the impact of new technology can be order, as the manner of its conception suggests, or it can trigger chain reactions, as its application suggests (chaotic or destructive effect); comment on the slogan "Computers mean network."

- The purpose of the article is to persuade, to capture attention, to contain at least two suggestions of interpretation of the impact of new technologies on everyone's life, suggestions that are well articulated to support the topic. The article must be of approximately 600 words.

When writing the article, one must keep in mind: the norms of the journalistic and essayist style, the persuasive nature of the writing, the manner of text organization; harmonization of ideas and arguments, adequacy of the language, structure of clauses, spelling and punctuation.

- Practicing the use of modern technology of communication;

Example: Discipline: **Sociology**, 11th grade, Chapter "Social Structure and Dynamic", topic: "Social Change"; communication skills required: writing an essay;

Task:

You are asked to write an essay on the topic: "Inequality of professional chances of the students in our class", after the following plan:

- Social origin and its importance in school/professional choice
- School performance and the chances of gaining a social status
- Political measures of reducing inequality of social chances.

The essay addresses your colleagues and must offer suggestions of applicable strategies right now (as a student) and for the future (as an adult) as regards school/professional success.

This type of application is based on the following theoretical premises:

- In any society, there are differences between the individuals, institutions and organizations. These must not be a source of conflict, but rather they should be acknowledged and used properly.
- The differences are produced at the level of social hierarchy, and social stratification generates a certain type of social order;
- Social change can take place in any social system and it can affect the position of any individual in part (e.g. the process of mobility) or the system in its entirety (revolutionary movements).
- The goal of your essay is to convince, to be accessible, interesting and to contain at least two suggestions of well structured strategies that support the topic from the sociological perspective. The aspects that must be taken into

account at the writing are: adequacy of the vocabulary, structure of the sentences; spelling, punctuation, respecting the norms of the essayist style, the persuasive nature, the manner of text organization, the harmonious manner of rendering ideas and arguments.

The elements of written communication skills are judged to be developed when:

- The text is interesting, accurate and convincing; stylistically personalized in an attractive manner
- The text has rhythm and it unfolds, putting to best use spelling and punctuation;
- The text has a balance and power of persuasion, adequate to the purpose and the task;
- The personal style supports the succession of arguments conferring a maximum of persuasive effect;
- The organization of the text gives the general idea of progressive chain of arguments, finalized with a personalized, stimulating conclusion;
- The strategic suggestions that support the topic are adequately argued, in line with the sociological perspective, and are supported by details that confer an interesting and stimulating aspect for other possible options.

In order to answer such demands of training, the teacher must identify the optimal means of approaching the teaching-learning process. The use of active methods is especially recommended, since they require the students to: formulate inquiries and hypotheses, find solutions, engage in intellectual sharing, evaluation and self-evaluation, etc. We will further on focus on a few types of activities that can contribute to the successful development of communication skills in the teaching-learning of social sciences (Sociology or Philosophy).

Didactic dialogue and the development of communication skills

To communicate efficiently and expressively means to convince, to be able to develop your thinking, feelings and personality; to inform intelligibly, and to understand correctly the significance of the message; to sense and to be aware of the responses, attitudes and changes in the behavior of those you address.

The capacity to carry out a dialogue, to exchange messages is essential for the development of the individual's personality and necessary for his participation in social interactions. In order for the students to develop their competencies of communication, we must take into account the aspects that occur in social communication: the direction of communication; frequency, context, goal, and the effects of communication. In addition, the analysis of the conditions of communication is imperative: the regularity of relations, proximity, similarity, group belonging, status and the role of the members of the group. All these elements are subordinated to a goal that must be pointed out with the control elements, as communication involves, by its nature, changes in the social structure or it can be determining in the dynamics of relations between individuals.

Pedagogical communication presupposes a permanent exchange of information, significance between two instances that change simultaneously their roles of emitter and/or receiver within the institutionalized framework of the teaching process.

The communication relation ensures the possibility to acquire values, knowledge, attitudes and behavior within the framework of an educational intervention that has the goal to modify, in different forms and different extents, the cognitive, attitudinal, action-directed nature of the individuals. The space of social interaction is heterogeneous from the standpoint of structure, and it involves: a location, an emitter that is responsible for verbal conduct, a receiver – either an individual or a group – that is rarely homogeneous, a well defined goal and the effect of the linguistic activities on the receiver. In a simplified manner, we could enumerate the aspects that generate interpretations of the process of communication looked upon in the broadest acceptation as follows:

- Symbols, speech, language;
- Common features, their enhancement;
- Reception, understanding of messages;
- Channel, technical vehicle of signals;
- Interaction, active exchange, relation;
- Memory, storing of information;
- Reducing uncertainty;
- Discriminatory response, selection of meaning;
- Process; transmission proper;
- Stimulus: cause of the response;
- Transfer in space and time;
- Intended communication;
- Connection, unification as articulator of communication;
- Context of communication, situation;
- Communication seen as a means of influencing people;
- Instrument of the power.

The individual's personality is formed in the field of interpersonal communication, he is not the passive receiver of messages, but according to his inner structures he correlates stimuli, and selects information. Through heuristic dialogue and group discussions, the student uses his thinking, makes an effort to analyze and synthesize, interpret, anticipate the answers, explore the alternatives, his imagination and creativity. The exchange of messages stimulates the intellectual activity and increases the knowledge of the participating students, who learn from one another actively, not only from the teacher. At the same time, in this serious game there are many feelings involved (emotions, sentiments, beliefs etc), which contribute to the complete engagement which can modify one's personality, cause deep changes in thinking and attitudes.

"A dialogue is authentic if each personality is engaged thoroughly, revealing sincerely his emotions, ideas and experiences to the others, because he wants to understand them, to change his attitudes and his intentions, if needed, by cooperating with the others in a permanent communication." (Gilbert Leroy, 1974, p.9).

The key to intellectual development is the use of the contribution of each individual within the process of communication. Efficient communication must overcome a series of obstacles that are generated by factors such as:

- Different perceptions and interpretations;
- Rash conclusions;
- Stereotypes manifested in the treatment of partners;
- Lack of knowledge of the topic;
- Different intelligences and intellectual abilities;
- Lack of interest of the interlocutor for the message;
- Difficulty of expression;
- Strong emotions that can block communication;
- Personality of the participants (arrogance, dictatorial attitude, conflicting situation);
- The general atmosphere in which communication is taking place (Apud N. Stanton, 1995, p. 4).

The role of the teacher is to contribute to the students' overcoming these obstacles, to promote communication, to correct things when they are wrong, to avoid the monotony of the activities in which the teacher is the only actor. He must raise the students' motivation to participate, help them to share messages, laying emphasis on the quality of the interventions. The student's skills of communication are revealed when:

- He shows availability to receive the messages issued by others;
- He receives the messages correctly, decoding the intentions and ideas being expressed;
- He proves the ability to interrogate the partners of communication;
- He does not accept an idea before analyzing it critically;
- He builds messages so that they are easy to understand;
- He expresses himself clearly, concisely and convincingly;
- He respects the rules of thinking (logical correctness);
- He presents arguments to support his statements;
- The messages are emitted consistent with the content;
- He uses techniques of verbalization, generalization and transfer of data;
- He avoids the pretension to proclaim truths that have not been demonstrated;
- Expression is exact, nuanced, correctly articulated, harmonious and expressive.

The teaching-learning activities of the social sciences suppose complex communication, which is based on the development of the capacity to carry out a dialogue, to cooperate in the conditions of accepting pluralism and judging differences positively, on the modeling of convictions and beliefs, to develop the desired moral-civic conduct.

In achieving education for communication, dialogue is essential, as a form of communication that means the access of all participants, at any time of the action, to one of the roles: emitter or receiver (asker or respondent).

Ready-made knowledge does not grant participation of the subjects in their own development; the type of knowledge gained in the school-based learning is not a goal in itself, but rather a strong basis for the development of skills that can enhance the capacity to participate actively and responsibly of the youth in social life. In a dialogue, there is inquiry, different opinions, and different perspectives of interpretation and argumentation that the participants have reached by a reflexive approach. They communicate their opinions as alternative solutions regarding the problem being tackled, arguing for their position.

It is essential that those involved in a dialogue feel they are partners in solving a problem, but individuals that see things differently, which is why they have to be allowed to express their opinion, moreover they need to be listened to carefully. The opinions and arguments of the others must be understood and taken into consideration, or else the relations in the dialogue cannot be efficient.

"... the partners of dialogue have the same chances and availability to lead the discussion, to suggest arguments, to accept or reject the others' arguments, to analyze values inherent in the statements and negations and to establish the sense of objectives" (Gh. Mihai, 1987, p. 36).

As we notice, there are no winners or losers, for no one can say they know everything. The dialogue situation disappears when one of the interlocutors thinks he is the only holder of the truth and looks with suspicion at the others' statements, or simply rejects them. Dialogue means openness to the others and mutual impact of opinions, for the interlocutors only communicates opinions. It is excluded that someone can unconditionally adapt a point of view, which is *a priori* considered infallible. In addition, in a dialogue you do not give up your opinion for another one, unless the other is more convincing by the arguments it uses.

Dialogue means for the students the opportunity to raise problems, inquire, search together, learn to express their opinions, think and behave democratically, accept diversity of ideas, be understanding and tolerant, respect others. The philosophical dialogue, but also dialogue carried out on sociological topics, is suggestive to this end.

Communication with others, in the form of dialogue, helps the students not only develop their capacity to argue and counter-argue, but also discover values based on which they will develop a personal line of conduct in agreement with what they feel, wish, they will develop a system of representations, ideas, concepts that take them gradually to the configuration of a model in life, of pro-cultural

attitudes as the determining factors of the development of any society. The process of learning must follow the integration of attitudes, skills, knowledge in operational structures, to lead to the possibility of creative application of the cognitive acquisitions in problem solving of an intellectual nature, or of a more practical type. Conceived as thus, school-based learning becomes the learning of instruments that favor the development of functional attitudes, correlated obligatorily with an adequate knowledge base, adjusted to the goal of developing an efficient rapport to the challenges of social realities which demand that people who have learnt to communicate socially to make decisions and face conflicts of any time efficiently.

Practicing communication skills in debates and discussions

The relationship among students is very important for practicing and developing communication skills and it can be achieved successfully within activities of guided conversation, or free dialogue, and debate on given topics, in connection with a controversial issue. In this way it is possible to facilitate mutual exchange, in an organized and constructive manner, of information, impressions, judgments, feelings etc. The role of the teacher is to organize the discussion (debate), to animate the dialogue, to supervise it on the go.

Collective discussions and debates offer students the opportunity to practice some basic abilities such as:

- The capacity to engage in a dialogue, in a public debate of an issue, in a negotiation or a conflict resolution;
- The capacity to formulate arguments and counterarguments, as well as to structure them in a logical system;
- The capacity to identify and use proofs (evidence) efficiently;
- The capacity to evaluate the different perspectives of thinking and action;
- The capacity to reflect critically on the prejudices and stereotypes of one's own and of others;

Within such activities, the students are forced to explain, demonstrate, and argue their statements. In order to meet the opponents' counterarguments, in a polemic, the student has to structure his message in such a way as to reach an agreement, which is a necessary condition for any argumentation. The information is not simply transmitted, in a mechanism of emission-reception; there are confrontations to reveal the limits of one or the other of the perspectives revealed. In order to achieve this successfully, the student must prove communication skills.

Debates can be organized in groups, after the following model: the students are divided into two groups; one of the groups states and supports a certain standpoint; the other group tries to counter-argue, sustaining something different or revealing the shortcomings of the argument. The topic in discussion, a significant issue, is communicated on the spot or somewhat beforehand, so that the students

can gather information and prepare their arguments. The first group (the affirmers) presents their standpoint on the topic, and the arguments that they base their statement on, while the other group (the negators) challenge it, doubt the statement of the first group, ask for clarification, explanations and suggest alternatives. The negators question the affirmers addressing those questions, so that they reveal the weaknesses of their statement. In the end, they can reach a common plan to solve the issue being debated. The participants in such debates develop their critical spirit, their divergent thinking, and their skills needed to communicate efficiently.

Practicing communication skills in group activities

The communication skills are developed in group activities where the students collaborate to carry out a certain common task. Within the group, there is a dynamic environment, which favors the development of face-to-face relations, which engage the students in a process of information gathering, communication, action and creativity.

In a group, when a problem has to be solved, the student is confronted with perspectives that are different from his. Each member of the group expresses their opinion and argues for it, comments and interprets, suggests hypotheses and participates in the decision-making process. For the interactions to reach their goal, it is necessary that each student take into account the opinions that are expressed, to make comparisons, and critical evaluations, to participate in the common solution to the problem that has been raised; which has an important role in the development of his skills of communication. Al. Rosca describes refined analysis of a group discussion – debate, as follows:

"Among the conditions of an efficient discussion one should mention, first, the investigative and cooperative attitude of the participants, and at the same time their sincerity, objectivity and openness to the others' arguments and opinions, which must be taken into account as distantly from the person who words them as possible. In a discussion, we do not set out from a preconceived ides, with the determination to defend it. The receptiveness of others' ideas does not mean easily giving up your own opinion, but only after the debaters have been convinced by the force of the other's argument." (Al. Roşca, 1981, apud I. Radu, 1994).

In conclusion, the development of communication skills by teaching and learning the social sciences, especially, represents a basic element for any type of activity that requests the full manifestation of the individual in the field of social reality.

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INSTRUMENT D'AUTOÉVALUATION ET D'AUTORÉGLAGE (conçu pour la formation mathématique des instituteurs)

GHEORGHE PLEŞ*

ABSTRACT. **A self-assessment and self-adjustment instrument. (for the preparation in Maths of the college students).** This study begins by presenting the information that resulted from testing the cognitive and motivational level of the first years students from the Teaching Colleges of Schoolteacher - Modern Languages located in Cluj-Napoca, Năsăud and Zalău, focusing on the demanding preparation at mathematics.

The conclusions that we reached from the administration of the documents after the beginning of the first year (October 2001) are illustrated in annex 1 and 2. These conclusion reported to the expected purposes of the formation (under the conditions of restricted number of Maths classes in the syllabus which is a total of 140) emphasized the need of an adequate teaching strategy, coherent and performant reflected in the curricular project on paragraph 3.

A teaching experiment has been implemented and it is in practice for the group in Năsăud, this project being designed for a better preparation in Maths of the college students. The experimental factor is in fact a set of self-adjustment sheets (annex 3); the control group being from the College in Zalău.

The promising results taken from the tested group after three semesters of four, on the basis of statistical processing given by the final assessment and the conclusions that offer an optimistic perspective on the experimental and curricular targets are illustrated in paragraph 3 and 4.

Les nouveaux instituts crées pour la formation des maîtres (appelés **Colegii de Institutori – Limba Modernă**) sont déjà arrivés – au moment août 2002 – à la 2ème série des promus. L'expérience accumulée pendant les quatre années de fonctionnement permet le décèlement des caractéristiques du processus de formation des étudiants en mathématiques – y compris sa didactique pour les niveaux préprimaire (= maternelle, 3-7 ans) et primaire (7-11 ans) comme ceci:

- des difficultés dans l'étude courrant autant que dans les démarches de récupération des savoirs et savoir-faire mal maîtrisés depuis les années du lycée;

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- l'absence pour un nombre important des étudiants d'un niveau satisfaisant de motivation intrinsèque pour la formation initiale et continue dans le domaine;
- le besoin de soutien méthodologique concernant l'accroissement du niveau de la préparation.

1. LES MATHS "VUES" PAR LES ETUDIANTS – INSTITUTEURS

Afin d'avoir une image réelle du degré de préparation initiale et des attitudes a l'égard de l'étude des mathématiques j'ai appliqué au début des études universitaires de la serie2001/ 2002 des «**Colegii de Institutori**» de Cluj – Napoca, Năsăud et Zalău (octobre 2001) deux documents pédagogiques:

- Un questionnaire (voire l'annexe nr.1) pour les 74 étudiants immatriculés à l'époque;
- un test (voir l'annexe nr.2) pour les 44 étudiants débutants de Năsăud et Zalău.

La statistique des questionnaires a mis en évidence quelques constats:

1) presque la moitié de l'effectif de l'échantillon considère prioritaire la préparation dans la langue moderne, en permutant les attributs de **Colegii de Institutori - Limba Modernă**:
   - 33 sujets (45%) ont demandé l'inscription dans l'espoir de devenir professeurs de langues modernes ou bien d'activer en dehors de la sphère didactique;
   - seulement 24 sujets (32%) souhaitent enseigner dans les écoles primaires et 23 (31%) dans les maternelles (il y 6 étudiants avec double option).
2) la distribution des sujets, suivant la section étudiée au lycée, justifie partiellement ces options divergentes. 16 sujets (22%) sont sortis d'une section d'École normale (cette section, avec une tradition multiséculaire dans l'enseignement roumain, forme des instituteurs au lycée, le diplôme de baccalauréat assurant cette qualité à l'âge de 19-20 ans); 23 sujets (31%) d'une section lettres, 13 (18%) d'une section scientifique, 12 (20%) des sections de type industriel et 10 (13%) d'une section sciences économiques.
3) Le niveau des connaissances mathématiques des étudiants est assez bas si on le rapporte au rôle et au statut des mathématiques dans les cycles maternelle et primaire, même si 51 sujets (69%) ont étudiés au lycée les types de programmes M_1 et M_2 (4 ou 3 heures pers semaine). Ainsi aux compositions semestrielles du lycée, 42 (30%) recevaient moins de 6 (sur dix) de moyenne, 16 (22%) des moyennes entre 8 et 9 et à peine 5 sujets (7%) plus de 9 de moyenne (dans cette étude toutes les notes des étudiants sont sur dix).

La $2^{éme}$ question donnait aux sujets la possibilité de choisir sur un spectre avec 9 attributs caractérisant l'étude des mathématiques; ils ont exprimé 103 opinions distribuées ainsi: passionnante (5), attirante (10); intéressante (33), ennuyante (5), fatiguante (12), un mal nécessaire (17); agaçante (7), stressante (11) et insupportable (3).

Les attributs à connotation négative étaient en nombre de 47 (46%) ce qui défie l'importance des mathématiques dans le travail pédagogique de l'instituteur mais reste en accord avec le niveau déclaré: 42 sujets (62%) au-dessous de la note 7 (sur 10) aux évaluations summatives au lycée.

Afin d'éliminer ou diminuer la dose de subjectivisme spécifique aux questionnaires d'opinion et d'évaluer le niveau de maîtrise des principaux concepts et algorithmes prévus au curriculum mathématique du lycée, ce questionnaire a été accompagné par un ***test initial*** (TI) appliqué pour les 44 étudiants de Năsăud et Zalău.

Cette épreuve contient 10 demandes: une reproductive, 4 exercices, 2 problèmes théoriques et 4 problèmes d'arithmétique, dont une, avec une interprétation didactique facultative. (voir l'annexe nr.2)

Le coefficient global de réussite était de 32,9% (298,5 / 880 points); celui-ci avait dépassé la moitié seulement pour 4 questions dont la résolution était basée sur des savoir-faire classiques: l'équation de $1^{ére}$ degré (80%), système linéaire (93%), la méthode figurative (58%) et le problème IV 1 dont l'exploration logique par la voie synthétique était transparente (78%).

Aucun étudiant n'a su attaquer la démonstration de l'irrationalité des nombres prévués à III 2, ni valoriser le potentiel didactique du problème IV 1 en découvrant la distributivité de la multiplication par rapport à l'addition, dissimulée dans la demande de double solution (chose surprenante, vu la participation de 16 étudiants sortis de la section école normale - sur 44 sujets examinés - qui ont participé au minimum à 150 heures aux activités d'arithmétique et de didactique mathématique pendant leur formation antérieure au baccalauréat).

Des mauvais résultats ont marqué l'utilisation des méthodes intensivement véhiculés au lycée: le raisonnement par l'absurde, la récurrence, la structure de l'ensemble $\Re$ ainsi que les questions provocant des raisonnements transductifs: seulement 35% des sujets ont observé que l'équation I 1 constitue un modèle algébrique du problème IV 2; de même 18% ont vu que le système I 2 résout, en fait, le problème IV 3.

Le lecteur remarquera facilement combien on est loin de l'aspiration curriculaire: "…l'étude des mathématiques dans les écoles doit contribuer à la formation et au développement des capacités des élèves à réfléchir sur l'univers; pour formuler et résoudre des problèmes à partir de l'interférence des connaissances des différentes disciplines, et de munir les élèves de compétences, valeurs et attitudes capables d'assurer une optimale intégration professionnelle". (MEC - Curriculum National 2001, page 7).

2. CURRICULUM MATHÉMATIQUE (PROJET)

Pour la formation des étudiants - instituteurs, qui seront pratiquement les premiers "professeurs de mathématiques" des générations des enfants inscrits dans les maternelles et dans les écoles primaires, c'est très important de réaliser une projection des documents curriculaires réalistes, permettant de mettre en concordance le niveau de la formation initiale avec les finalités éducationnelles désirables.

Un tel "Projet de curriculum mathématique pour les **Colegii de Institutori**"; (Gheorghe Pleş, 2000, pages 12 - 73) a été conçu, présenté et admis dans le cadre du plan individuel du doctorat dont la thèse est intitulée: "La modernisation du curriculum mathématique pour la section littéraire du lycée et le Colegiul de Institutori", (Gheorghe Pleş - Năsăud, coordonnateur prof. univ. Miron Ionescu de l'Université Babeş-Bolyai de Cluj-Napoca).

Ce projet a été élaboré en partant de l'idée que l'ensemble d'objectifs-cadre pour le programme de mathématique et didactique pour les deux niveaux (maternelle et primaire) soit unitaire.

Voici les 4 directions de sa structure:

O_1: Actualiser et compléter les connaissance de l'instituteur dans la perspective de l'enseignement des mathématiques.

O_2: Consolider et développer les capacités d'opérer avec les connaissances de base, en agissant pour leur intégration et application et pour l'investigation + résolution des problèmes.

O_3: La mise en évidence des modalités efficaces pour l'implémentation des connaissances de base et l'adaptation du langage mathématique en régime accessible.

O_4: Cultiver l'intérêt et la motivation pour former et consolider l'habitude et l'attitude de formation continue dans le domaine mathématique et sa didactique.

Afin de sélectionner les contenus des programmes on a utilisé un set de critères extraits directement des objectifs cadre, en liaison directe avec les programmes de type opérationnel, qui doivent intégrer "… non pas une énumération des thèmes, mais des activités, habitudes, compétences… que les étudiants doivent manifester à la fin de l'étape didactique projète… (Ce programme)… doit préciser les objectifs évaluables et indiquer les critères d'évaluation de leur accomplissement". (Miron Ionescu, 1998 page 82).

Les savoir-faire proposés ont été sélectionnés afin de:

1. clarifier les notions et les algorithmes prévus à être enseignés jusqu'à la fin du cycle primaire;
2. permettre la démonstration en régime de rigueur de toutes les propriétés et théorèmes qui se reflète dans les techniques de calcul du cycle primaire;
3. offrir, en partant des connaissances de logique mathématique et théorie des ensembles, des possibilités d'argumentation et même de démonstration des assertions intégrées au cours;
4. constituer des instruments opérationnels à caractère interdisciplinaire, surtout pour l'attaque des problèmes avec un degré élevé de difficulté (dénombrements et récurrence) ou avec application dans la recherche pédagogique (probabilités et surtout statistique);

5. assumer l'approfondissment des notions, chapîtres et certaines extensions limitées stimulant la compréhension optimale du fonctionnement des structures cognitives et applications spécifiques (ensembles, nombres, opérations, configurations, etc.);
6. accorder une place privilégiée à la problématisation: au niveau arithmétique et aussi dans les champs interdisciplinaires.

Les savoirs sont présentés sur deux colonnes (Gheorghe Pleş, *op. cit.*, p. 13-62)

- à gauche les contenus proprement dits (issus des objectifs référentiels et listés dans le préambule de chaque chapitre, groupés par d'objectifs-cadres dont elles dérivent: notions, propriétés fondamentales, théorèmes, algorithmes)
- à droite des éclaircissements, délimitations exemples appropriés (voir l'annexe nr. 4)

Le projet curriculaire contient à sa fin des listes des standards de performances accompagnés d'une collection des fiches présentées ci dessous et conçues dans le but de faciliter le travail individuel de l'étudiant pour actualiser et compléter (récupérer) les connaissances mathématiques de base qui ne peuvent pas manquer du bagage cognitif, applicatif et méthodologique de l'instituteur.

3. FICHE D'AUTOEVALUATION ET AUTOREGLAGE

C'est un instrument didactique structuré en 5 volets codifiés:

SC = problèmes de niveau des **S**tandards **C**urriculaires
SB = **S**upports théoriques de **B**ase
EA = **E**xercices d'entraînement (**A**ntrenament - en roumain)
PS = **P**oints de **S**outien
RS = **R**éponses et pistes de recherche
(**S**ugestii rezolutive - en roumain)

(voir l'annexe 3)

Les questions sélectionnées pour **SC** représentent des occasions permettant d'évaluer le niveau de l'étudiant par rapport aux standards de performance; celui qui arrivait à résoudre tous les problèmes de **SC**, est rassuré que son niveau de préparation est élevé.

Si pour une ou quelques-unes (même toutes) des questions, l'étudiant n'est pas capable de répondre aux demandes, il peut chercher dans la séquence **SB** les concepts ou les structures cognitives / applicatives qui peuvent l'éclairer et lui ouvrir la fenêtre de "l'illumination". Il sera conduit vers l'approfondissment des questions utiles et aussi dirigé pour combler ces lacunes.

La section **EA** offre du matériel pour consolider les acquisitions prévues au **SB** et inclut des sets d'exercices et problèmes avec des degrés progressifs de difficultés s'approchant doucement vers le niveau des questions révélées inabordables à l'étape **SC**.

Pour les résolutions des questions de **EA** d'abord, et puis, en deuxième essai, pour **SC**, l'étudiant pourra s'appuyer sur les éléments de **PS** et **RS**.

De telles fiches ont été conçues et proposées aux étudiants pour chaque thème important du programme, surtout pour les thèmes inclus dans le 1er semestre: de la1er année (SI 1), mais aussi, avec une fréquence diminuée, dans les semestres suivants (SI 2 et SII 1) parcourus jusqu'à présent(mars 2003).

Voilà les notes obtenues au test initial (TI) et aux examens (E I, II, 1, 2) des dits - semestres par les 18 étudiants restés inscrits en février 2003.

Tableau nr.1: Les notes des étudiants

Etudiant	*Notes obtenues*			
	TI	*EI 1*	*EI 2*	*EII 1*
Avram Adela	3,5	5	5	7
Benţa Lucia	6	7	5	7
Bindea Adriana	7,5	8	9	8
Costin Ioan	4,5	9	9	10
Filip Ioana	5	7	8	7
Ghiran Crina	3,8	4	4	5
Macra Claudia	2,5	5	5	5
Mălai Gabriela	4,3	8	7	7
Movileanu Gabriel	6,2	5	5	4
Mureşan Crina	4,5	9	6	7
Peter Mihaela	7,5	8	10	9
Pop Antoanela	6	6	7	5
Prădan Iuliu	8,2	8	7	9
Roş Crina	4	7	5	5
Rus Lia	5,5	8	9	7
Simion Nicoleta	2	4	5	3
Stetz Cristina	4,2	5	5	5
Toader Ioana	2,5	5	3	5

Les indicateurs statistiques quantitatifs calculés pour chacun des quatre séries présentent les suivantes progressions:

Tableau nr.2: Les indicateurs statistiques des 4 séries de notes.

Épreuve	T I	E I 1	E I 2	E II 1
Moyenne	4,86	6,56	6,33	6,39
Variance	3,0214	2,6914	3,7900	3,2944
Écart - type	1,7382	1,6405	1,9468	1,8150

4. CONCLUSIONS

Toutes ces données statistiques mettent en évidence un saut important enregistré par les étudiants de Năsăud au premier examen (EI1) par rapport au TI; il s'explique par la spécificité du travail déployé aux cours et aux travaux pratiques de mathématiques de ce semestre: l'intégration d'une expérimentation pédagogique, dont l'hypothèse envisageait le progrès des étudiants en mathématiques.

L'activité a été centrée sur l'implémentation des **fiches d'autoévaluation et autoréglage**, en tant que facteur expérimental par: présentation, dès le début, du mode d'emploi, manière d'intégration dans l'étude individuelle, soutien en cas de difficultés.

Le spectre des réactions des étudiants a été assez diversifié au début: de l'intérêt pour assimiler le nouveau mode de travail pour plusieurs étudiants jusqu'à la méfiance et l'indifférence pour des autres.

Mais, au fur et à mesure du travail déployé au cours de SI 1, quand les nouveaux savoirs et savoir-faire s'accumulaient et mettaient en évidence les lacunes, les fiches trouvaient des plus en plus d'adeptes; elles se transformaient dans un instrument accepté d'abord et recherché, surtout à l'avant-veille de l'examen, par la plus grande partie des étudiants.

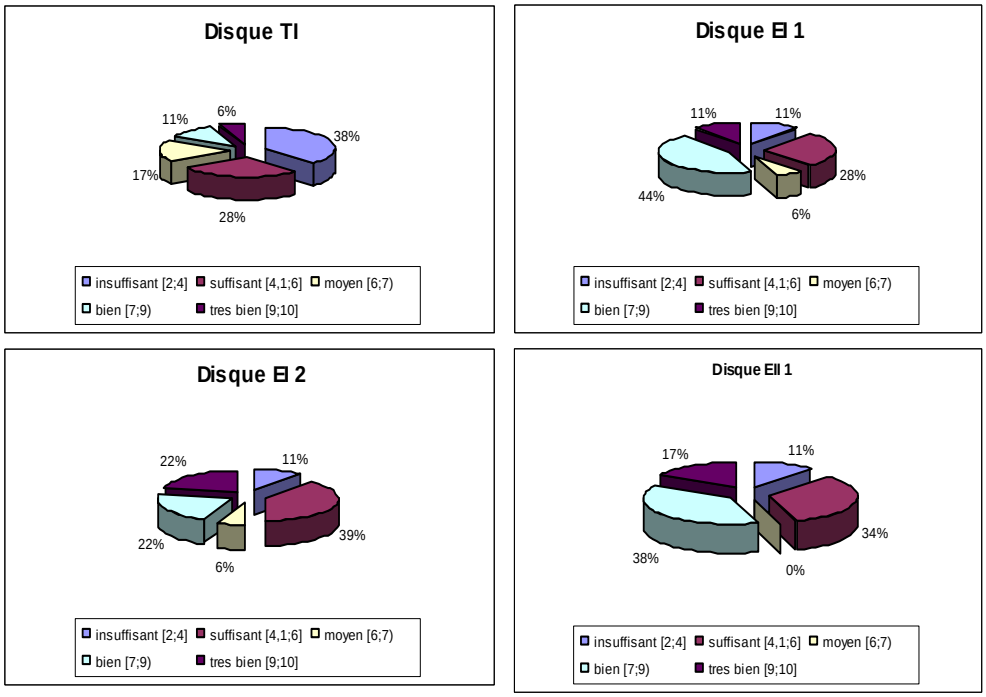
Le progrès enregistré (Δn = 1,74/10 c'est à dire 35,9%) à l'examen EI 1 (janvier 2002) par rapport au TI (octobre 2001) a été confirmé par les observations du semestre SI 2 (augmentation de l'intérêt des étudiants pour l'étude des mathématiques) et surtout pour les notes obtenues au EI 2 (juin 2002) quand la moyenne est restée dans le même registre de valeurs (6,33 par rapport à 6,56 pour EI 1).

Cette évolution positive continue à être enregistrée au semestre SII 1 dont l'examen de janvier 2003 à enregistré une moyenne de 6,39, qui reste donc dans le voisinage de EI 1 et EI 2.

L'évolution de l'écart - type est à son tour caractérisée par des valeurs voisines, à l'exception de l'épreuve EI 1 quand il a diminue de 18%, graçe à la réduction de l'amplitude de la série (5 unités EI 1 par rapport à 6 au TI); résultat dû à une préparation responsable de la plus grande partie des étudiants.

Pour EI 2 et EII 1 l'écart - type augmente autour de 1,9, la valeur maximale (1,94) étant touchée à EI 2 quand on a enregistré la première note de 10 (sur 10, comme toutes les notes présentées ci-dessus).

La distribution des notes par des échantillons correspondantes aux niveaux d'évaluation: insuffisant [2, 4], suffisant [4.1, 6), moyen [6, 7), bien [7, 9), très bien [9-10] sont plus facilement observables sur les disques de structure suivants:



3. Disques de structure

C'est facile à remarquer l'élargissement des secteurs correspondants aux bonnes notes (de 7 à 10) ce qui encourage le développement de l'utilisation des **fiches d'autoévaluation et autoréglage** pour le 4^{éme} et dernier semestre du curriculum mathématique pour les futurs instituteurs.

L'expérience de l'implémentation des fiches dans l'activité déployée déjà au **Colegiul de Institutori** de Năsăud atteste que ce travail impose un effort de volonté important de la part de l'étudiant mais il lui apporte un soutien efficace, afin de régler son style de travail intellectuel dans l'esprit d'activisme, de concision, et de rigueur, voire de la réussite pédagogique.

ANNEXE NR.1

QUESTIONNAIRE

Nom et prénom ……..
Lycée suivi …….
Section et année du baccalauréat ……
Date (de remplissage) …….

1) Préciser les facteurs déterminants pour votre inscription au **Colegiul de institutori** (éventuellement en pourcentages).

2) Estimer, en pourcentages, vos propres espérances de professer après la fin des études en tant que:
   a) instituteur - cours prèprimaire ☐
   b) instituteur - cours primaire ☐
   c) professeur de langue moderne ☐
   d) autre variante ☐

3) Comment avez-vous apprécié, en tant que lycéen, l'étude des mathématiques:

passionnée	*un mal nécessaire*	*énervante*
attirante	*ennuyante*	*stressante*
intéressante	*fatiguante*	*insupportable*

4) Dans les classes terminales vos
   - moyennes en maths étaient ……..
   - notes aux compositions semestrielles étaient ……..

5) Est-ce que l'étude des mathématiques a eu un rôle positif dans l'évolution de votre personnalité? ☐ (OUI ou NON)
   Si OUI parce-que …….
   Si NON parce-que ……...

6) Essayer une définition pour les mathématiques.

7) Nommer au moins trois méthodes spécifiques aux raisonnements mathématiques.

8) Quel est votre avis sur le rôle des mathématiques dans l'évolution de l'élève au cycle primaire?

9) Quels sont vos souhaits vis-à-vis des cours des mathématiques et de sa didactique que vous allez suivre pendant des années I et II?

RÉPONSES / COMENTAIRES

ANNEXE NR. 2

TEST

I. Résoudre:

1) $\frac{x}{4}+\frac{1}{6}\left(x-\frac{x}{4}\right)+2\cdot 15=x-10$

2) $\begin{cases} x+y=32 \\ y-3x=0 \end{cases}$

II. 1) Déterminer, en argumentant, le dernier chiffre de:

$m_1=2001^{1997}$ et $m_2=1997^{2001}$;

2) Montrer, en deux manières:

$1+3+5+7+...+(2n-1)=n^2, n\in \mathrm{N}, n\geq 2$;

III. 1) La structure de l'ensemble $\Re$ des nombres réels.

2) Montrer que:

a) si n^2 est paire alors n est paire;

b) les suivants nombres sont irrationnels:

$\alpha=\sqrt{2}$, $\beta=0,28288288828...$

IV. 1) Une caisse avec des bananes pèse 5 kgs et une caisse avec des oranges 4 kgs. Combien pèsent au total 3 caisses avec bananes et 3 caisses avec oranges? (commentaire didactique facultatif)

2) Un touriste a parcouru au premier jour un quart du chemin; le deuxième jour $\frac{1}{6}$ du reste, le troisième jour 15 kms et également 15 kms pour le quatrième. Quelle était la longueur de chemin si pour le cinquième jour ont lui resté 10 kms? (2 solutions).

3) Un ballot de 32 mètres de toile a été coupé en deux morceaux, la longueur du deuxième mesurant trois fois moins que la première. Déterminer les longueurs des deux morceaux (2 solutions).

ANNEXE NR. 3

FICHE D'AUTOEVALUATION ET AUTOREGLAGE

Thème: Combinatoire et probabilités

SC (=**S**tandards de performance **C**urriculaire)

SC_1 De combien de manières peut-on;
a) ranger 5 livres sur une étagère;
b) sélectionner des couples mixtes d'une classe de 28 élèves dont 12 garçons;
c) extraire sans remise 3 boules d'une urne à n boules;
d) extraire avec remise 4 boules de la même urne;
e) obtenir des triplets de chiffres de 1 à 6 au lancement de 3 dès;

SC_2 Calculer la probabilité d'obtenir:
a) face, au lancement d'une pièce;
b) double au lancement de 2 dès;
c) un couple mixte d'une classe à 28 élèves dont douze filles;
d) un numéro de téléphone à 6 chiffres consécutifs et sans répétition;

SB (=**S**upports théoriques de **B**ase)

SB_1 Le nombre de possibilités pour ranger *n* objets différents est ...……..

SB_2 Le nombre de possibilités de retirer d'une urne à *n* boules;
a) *k* boules avec remise est ....……...
b) *k* boules sans remise est .....……..

SB_3 La formule de calcul de la probabilité d'un événement est ……..... où …….....

SB_4 Définir: univers, épreuves équiprobables, événement (A), événement contraire ($\overline{A}$), probabilité p(A).

SB_5 Si $p(A_1)=\alpha$ et $p(A_2)=\beta$ on demande $p(\overline{A_1})$, $p(\overline{A_2})$ et $p(A_1 \cup A_2)$ si les événements A_1 et A_2 sont indépendentes.

EA (=**E**xercices d'entraînement - **A**ntrenament, en roumain)

EA_1 Un fichier est numéroté de 00001 à 10000. Quelle est la probabilité d'extraire une fiche dont le numéro:
a) ne contient pas le chiffre 7;
b) contient le chiffre 8.

EA_2 On lance simultanément 6 dès, chacun marqué de 1 à 6. Quelle est la probabilité d'obtenir :
a) 6 fois le chiffre 5;
b) 6 fois la même face;
c) tous les chiffres de 1 à 6;
d) au moins une fois le chiffre 5.

EA$_3$ Une cage contenant 3 perroquets jaunes et 5 verts est oubliée ouverte. Quelle est la probabilité que:
a) le premier perroquet évadé soit vert?
b) deux perroquets verts s'évade avant du premier jaune sorti?
c) avant le premier perroquet jaune s'évade exactement deux verts?

EA$_4$ De 100 ampoules, 10 sont endommagées. Quelle est la probabilité qu'en choisissant 5 ampoules, on obtient d'ampoules endommagées?

EA$_5$ Monsieur Distrait garde ses 6 paires de chausseurs au hasard dans un débarras sans lumière. Quelle est la probabilité d'obtenir au moins une paire correctement constituée si on extrait 4 chaussures?

PS (=**P**oints de **S**outien)

Utiliser les formules de:
- la définition de la probabilité
- $p(A_1 \cup A_2)$
- $p(\overline{A})$

RS(**R**éponses et pistes de recherche - **S**ugestii, en roumain)

SC$_1$ a) 5!=120; b) $A_{15}^1 \cdot A_{13}^1 = 15 \cdot 13 = 195$; c) $A_n^3 = n(n-1)(n-2)$; d) n^4; e) $6^3 = 216$.

SC$_2$ a) $\frac{1}{2}$; b) $\frac{1}{6}$; c) $\frac{13 \cdot 15}{28^2} \approx 0{,}249$; d) $\frac{2 \cdot 5}{10^6} = 0{,}00001$.

SB$_1$ n!

SB$_2$ a) n^k; b) $A_n^k = n(n-1)...(n-k+1)$.

SB$_3$ $p(A) = \frac{m}{n} = \frac{card\ A}{card\ \Omega}$.

SB$_5$ $p(\overline{A_1}) = 1-\alpha$; $p(\overline{A_2}) = 1-\beta$; $p(A_1 \cup A_2) = p(A_1) + p(A_2) - p(A_1) \cdot p(A_2)$

EA$_1$ a) $\frac{9^4}{10^4} = 0{,}6561$; b) $1 - \frac{9^4}{10^4} = 0{,}3439$.

EA$_2$ a) $\frac{1}{6^6} \approx 0{,}00002$; b) $\frac{6}{6^6} \approx 0{,}00012$; c) $\frac{6!}{6^6} \approx 0{,}0154$; d) $1 - \frac{5^6}{6^6} \approx 0{,}665$

EA$_3$ a) $\frac{5}{8} = 0{,}625$; b) $\frac{5 \cdot 4}{8 \cdot 7} \approx 0{,}357$; c) $\frac{5 \cdot 4 \cdot 3}{8 \cdot 7 \cdot 6} \approx 0{,}179$

EA$_4$ $1 - \frac{C_{90}^5}{C_{100}^5} \approx 0{,}417$

EA$_5$ $1 - \frac{12 \cdot 10 \cdot 8 \cdot 6}{12 \cdot 11 \cdot 10 \cdot 9} \approx 0{,}515$

ANNEXE NR. 4

CHAPITRE 4 SYSTEMES DE NUMÉRATION (1 cours + 2 séminaires)

A. OBJECTIFS DE RÉFÉRENCE

L'étudiant – instituteur doit être capable de:

O_1 *Actualiser et compléter les connaissances de l'instituteur dans la perspective de l'enseignement des mathématiques:*

1.1. définir: système de numération + exemples;
1.2. classifier les systèmes;
1.3. définir base de numération dans un système positionnel + utilisation pour la décomposition de nombres dans précisée base;
1.4. connaître les procédés de conversion + argumentation à l'aide des opérations avec des nombres et des polynômes à coefficients réels.

O_2 *Consolider et développer les capacités d'opération avec les connaissances de base en agissant pour leur intégration et application et pour l'investigation + résolution des problèmes:*

2.1. représenter les entiers naturels dans différents systèmes et les quotients dans les systèmes positionnels;
2.2. effectuer les conversions des entiers naturels, et des nombres décimaux d'une base vers une autre base;
2.3. démontrer la rigueur de ces procédés;
2.4. effectuer des opérations arithmétiques dans une base donnée;
2.5. utiliser les procédés et les propriétés des nombres dans la résolution des problèmes.

O_3 *La mise en évidence des modalités efficaces pour l'implémentation des connaissances de base et l'adaptation du langage mathématique en régime accessible.*

3.1. adapter les savoirs et les savoir – faire à la spécificité du cycle primaire.

O_4 *Cultiver l'intérêt et la motivation pour former et consolider l'habitude et l'attitude de formation continue dans le domaine mathématique et sa didactique:*

4.1. compléter les connaissances par extensions des entiers naturels vers les nombres rationnels ensuite vers les réels.

B. LES CONTENUS

4.1. Systèmes de numération, exemples, classifications, chiffres	Présentation de l'évolution historique des systèmes analogiques (encoches, machine á compter) additionnels (égyptien, grec, romain, slavon)
4.2. Bases de numération, ordres et classes, tables des opérations	L'écriture des représentations systématiques des entiers naturels et des quotients dans les bases 2, 8, 10, et 12 et construction des tables de l'addition et multiplication
4.3. Conversions: a) vers la base 10 b) de la base 10 vers une base précisée c) d'une base $a(\neq 10)$ vers une autre base $b(\neq 10)$	Étude approfondie pour les entiers naturels et informative pour les décimaux
4.4. Opérations dans une base $a(\neq 10)$	- traitement des 4 opérations fondamentales dans les bases 2, 8, 12 - utilisation de la variante de la double conversion par la base 10 - résoudre exercices et problèmes spécifiques: - équations: $12_{(x)} + 36_{(y)} = 46_{(7)}$ - systèmes: $\begin{cases} \overline{45y}_{(x)} = 178_{(10)} \\ 452_{(x)} = \overline{3y1}_{(10)} \end{cases}$ - calculs des derniers chiffres pour: $n^2, 8^n, 2^n + 5^n, 7^n - 4^n$

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LA PROBLÉMATISATION ET L'ÉTUDE DES SCIENCES ET DE LA TECHNOLOGIE

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ABSTRACT. The Problem Solving and the Study of Science and Technology. Science and technology offers the ways and methods to understand, make predictions about and adapt our environment. The study of science and technology use the problem solving method. Problem solving are facilitated when students learn to work strategically. Using their experiences, observations and prior knowledge to make aware the discrepancies and contradictions in phenomena and events the students can raise questions. Constructing a precise question, they can define a problem. Finally, the effective problem's solving suppose to plan, to make decision, to monitorise and to reflect over problem's solution process.

Les situations d'apprentissage axées sur la problématisation mettent l'accent sur l'implication active des étudiants à la recherche d'une réponse à la situation-problème, recherche qui réside plutôt dans la construction d'une solution que dans la résolution de problèmes (dans ces termes nous parlerons sur la problématisation). Par conséquent, l'aquisition, par les étudiants, des competences dans l'utilisation de cette dernière méthode doit représenter, aussi, un but important de l'apprentissage des sciences et de la technologie.

1. Des considérations épistémologiques

Les considérations épistémologiques concernant le problème visent, d'un part le problème et la typologie des problèmes et de l'autre part mettent sous la question la pratique de l'utilisation d'un et du même problème autant pour l'apprentissage que pour l'évaluation aussi.

Orange (1993) considère que dans la science, la relation problème-connaissance est circulaire. Ainsi, montre Orange, K. Popper croit que le problème scientifique est à la base de la connaissance théorique et les connaissances représentent le cadre de l'apparition et de la construction des problèmes. L. Laudan (Fabre, 1993) voit dans le problème le moteur de la connaissance respectivement de la connaissance avec le problème conduit à l'identification des types de problèmes et

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même à une hierarchie de problèmes. Les-uns de ces problèmes peuvent être rencontrés aussi dans le procès de l'apprentissage et d'instruction.

Le problème (étimologique, le grec "problema") signifie une provocation qui t'empêche d'avancer dans la connaissance ou qui devient objet des controverses d'idées. On parle d'un problème chaque fois quand sur la voie de l'activité théorique apparaît un obstacle, une difficulté pour l'éloignement duquel le sujet ne peut pas répondre automatiquement. Donc la réponse ne peut pas être formulée par la simple référence à l'expérience antérieure (algorythmes, techniques de décision et interprétation de l'information), elle implique des décisions et des options sur les types de connaissances, règles et pricipes nécessaires, l'ordre de leur utilization, etc.

De la perspective de la phychologie cognitive tout problème peut être analysé sur deux plans (Fabre, 1993, Miclea, 1994): un plan objectif, concret - le contenu du problème et l'autre subjectif, déterminé par la relation du sujet avec les connaissances auxquelles fait référence le contenu du problème.

L'utilisation des problèmes comme point de départ d'une situation d'apprentissage suppose, d'après Dumas - Carré et Goffard (1993) la rédaction des problèmes ouverts:

- la situation scientifique etudiée est décrite en termes de phénomène, tout comme l'information sollicitée aux sujets;
- de l'énoncée du problème ont été supprimés les dates (celles d'entrée et celles de sortie).

Dans ce deuxième cas le rôle du professeur est de soutenir les étudiants dans le construction de la solution.

Cette construction de la solution suppose deux étapes: la rédaction du problèmes par le complètement des dates, des informations de l'énoncée du problème et puis la solution proprement-dite par l'expériment, la modélisation ou la solution du problème.

Le concept de situation - problème

Comme tout problème, la situation - problème suppose la confrontation de l'expérience cognitive - emotionnelle antérieure avec l'inconnu présent dans la rédaction du problème. Mais, à la différence du problème, dans le cas de la situation - problème cette confrontation rélève une contradiction qui donne naissance sur le plan psychique à un état de conflit cognitif interne (Păun, 1991). Cet état est subi difficilement par le sujet qui dépose, pour dépasser la difficulté, un effort supplémentaire (Festinger).

Les situations - problème s'intégrent dans la catégorie des problèmes ouverts mais elle s'identifient par le conflit intern de nature épistémologique qu'elles provoquent.

2. Les sources des situations - problèmes dans la pratique didactique

Nous présentons, dans la suite, *une classification des contradictions qui peuvent générer des situations – problèmes:*

- des contradictions entre les connaissances empiriques, incorectes ou incompletes/ les prédictions basées sur ceux-ci et les faits d'observation, les faits évoqués (par le professeur, par éxemple), les connaissances correctes;

- des contradictions entre les méthodologies incorrectes, acquises spontanément ou correctes (parce qu'elles ont fait l'objet d'une instruction) mais inadéquates à une situation donnée et les concequances de leur application dans la pratique;

- des contradictions entre les connaissance théoriques et pratiques concernant le même fait physique: les connaissances théoriques et les observations du subjet sur le realité, les solutions théoriques d'un problème et leur application dans la pratique;

- des contradictions déterminées par un désaccord aparent entre les connaissances théoriques différentes concernant le même fait scientifique/technique: les interprétations ou les prédictions résultées à partir des hypothèses, des modèles théoriques ou des théories, différentes, le comportement différent de certains systèmes dans des situations différents, la demande de résoudre un problème par plusieurs méthodes;

- des contradictions générées par la nécessité de choisir entre les alternatives: le mode d'application dans de nouvelles conditions des connaissances, la nécessité d'identifier la voie optimale de solution à partir de plusieurs variantes résolutives ou d'évaluer les alternatives, l'existence de deux modes possible de penser ou d'action dans une situation donnée.

3. La problématisation d'un contenu scientifique donné

Cerghit (1980) considère qu'il faut faire une distinction entre "la formulation du problème et la solution du problème". Dans la première étape, montre Bruhardel (Cerghit, 1980), le professeur peut:

- donner aux étudiants un matériel conflictuel et leur prétendre de saisir la contradiction et d'énoncer le problème qui en résulte;

- d'énoncer le problème et de prétendre aux étudiants de trouver le matériel necessaire à sa solution;

- de solliciter aux étudiants l'identification de la contradiction dans un matériel sans contradictions, apparemment.

Dans la pratique didactique la plus utilisée est la deuxième variante mais il faut initier les étudiants dans la technique du problématisation d'un contenu scientifique:

- l'identification, dans le contenu scientifique, des connaissances qui peuvent générer une contradiction;

- l'évidence de la contradiction par la rédaction de la question – problème (la concretisation de la contradiction).

4. Les étapes de la solution des situations – problème

En analysant les situations – problème décrites nous allons constater que celles-ci présentent pour l'étudiant les traits du problème réels avec lesquels se confrontent les chercheurs:

- l'ambiguité: les faits ne sont pas clairement formulés et modelés. Les caractéristiques que la solution devra accomplir ne sont pas précisées;
- l'incertitude impose la composition des hypothèses envers la théorie d'où font partie les faits mentionnés dans le problème. Sur ces hypothèses on procédera à la modélisation des faits mentionnés dans le problème;
- il n'y a pas de dates sur lesquelles on peut opérer à l'aide des connaissances théoriques, ces dates doivent être proposées selon les modèles construits;
- la nécessité de ne pas accepter la solution qu'après la confrontation avec les hypothèses formulées et la connaissance antérieure.

Par conséquant Dumas-Carré, Caillot, Martinez et Gill (1989) proposent que toute construction de la solution se réalise ayant comme modèle le chercheur confronté avec un problème scientifique c'est-à-dire avec un vrai problème. En étudiant le contenu du problème le chercheur ne sait pas comment il va résoudre le problème, il ne sait ni s'il y a une solution pour le problème avec lequel il se confronte.

Cette description du problème suggère les étapes qui doivent être suivies dans la construction de la solution d'une situation – problème:

- *L'analyse du contenu de la situation – problème* (concrétisée par la question – problème)
- *L'anticipation de la démarche de la construction de la solution.* Cette anticipation vise:

  - la rédaction des hypothèses de travail concernant la solution de la situation – problème;
  - la reprise de la rédaction de la situation – problème comme un problème ouvert.
- *La solution du problème ouvert* réside dans la réalisation des démarches necessaires à la justification des hypothèses de travail formulées (par l'étudiant ou selectionées par un groupe). Pour la solution de ce problème ouvert il faut préciser:

  - les traits du produit qui sera réalisé: une explication, un modèle, un résultat quantitative, etc.
  - les conditions de réalisation du produit;
  - la planification des actions;
  - les critères d'évaluation.

  Ces information sont nécessaires à l'étudiant pour se faire une représentation correcte (concordante avec celle du professeur et de ses camarades) sur la tâche qu'il doit exécuter. Ayant ces dates l'étudiant peut commenncer *la*

recherche des informations necessaires pour l'élaboration d'une solution et puis, *la construction de la solution*.

- *L'analyse critique de la pertinence de la solution obtenue et de la démarche de la construction de la solution.* L'analyse réside, comme nous l'avons déjà montré en parlant des caractéristiques du problème dans la science, dans la confrontation de la solution avec l'hypothèse considérée aussi. Autant la construction d'une situation-problème que la solution de celle-ci aussi supposent la situation de conflit socio-cognitif (la transformation du conflit de l'individu avec les autres en conflit cognitiv intern).

On a distribué aux deux groupes des étudiants en chimie et physique (Université "Babeş-Bolyai") et en électronique (Université Technique de Cluj) des questionnaires contenant des situations-problème. Pendant le temps on a observé les actions fait par des étudiants pour solutioner les situations-problème. Les constatations sont suivants:

- pour la construction de la solution d'une situation-problème les étudiants en électronique procédent à une recherche systematique des informations (dans les catalogues, dans les livres, sur l'Internet etc.). Au contraire, les étudiants en chimie se resume à feuilleter les livres avant d'abandoner la resolution du problème en mettant en cause "le manque des informations";

- moins de 10% des étudiants questionnés réalisent une analysé critique de la solution de la situation-problème. Une partie de ceux qui affirment réaliser cette dernière étape spécifique se résume à l'appréciation de l'utilité de nouvelles connaissances;

- aucune étudiant ne procede à une évaluation, du point de vue méthodologique, de l'activité réalisée pour la construction des solutions.

5. Conclusion

L'enseignement roumain a connu pendant les dernières années une vraie obséssion: la solution d'un nombre de plus en plus grand de problèmes. A l'aide de ces problèmes les étudiants viennent en contact avec plus de situations particulières. Les enseignant ont oublié ce qu'il faut acquérir: des méthodes et non pas des resultats. Ils ont transformé l'activité de résoudre des problèmes dans une chasse de résultats. Cette situation doit cesser.

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STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLVIII, 1, 2003

STRATEGIES BY EVALUATION IN THE TEACHING – LEARNING PROCESS AT CHEMISTRY. APPLICATIONS AT THE THEME: "SALTS"

ADRIENNE NAUMESCU KOZAN, ADRIANA BANC

ABSTRACT. Strategis by Evaluation in the Teaching-Learning Process at Chemistry, Applications at the Theme: "Salts". In our class, we can say that education is a pre-condition of the achivements of individuals and communites (Marga, 2003). It is an objective necessity to accelerate the reform of *education* and in this context a very important role has the evaluation/autoevaluation of the whole activity of teachers at the level of any scientific discipline. There are studies concerning with some basic problems connected with the practical evaluation in the chemistry field (Naumescu, Banc, 2001).

1. Introduction

An interactive pedagogy includes the act of evaluation and it proposes to analyse the teaching process achieved at pupils, so that one teacher to achieve in every moment the feed / back (Bocos, 2002). There are in special literature a lot of evaluation definitions, for example: "The evaluation means to confront an ensemble of pertinent criterions for to take the decisions" (Bocoş, 2002).

The evaluation of learning-teaching process is a component of didactic technology beside design, achievement and is followed by the regulations (autoregulation) witch is interrelates witch evaluation. It is important for us to apply a continue evaluation in the learning – teaching process, an evaluation centered on the operational objects (Naumescu, Pirson, 1993).

2. The pedagogical research

The pedagogical research concerning the pupils from VIIIth A classroom, VIIIth B classroom and VIIIth C classroom had been effected at "Anghel Saligny" Colegium from Cluj-Napoca. Each class had been divided in two level groups (level I, level II). The first level group contains pupils with high level of knowledges and second level group – the pupils with "little" level of knowleges.

Table 1.

Initial test – for the group with level I

Nr. Crt.	**Subject**	**Score**
1.	We are given on the table the next salts: NaCl, $CaCO_3$, $AgNO_3$, $CuSO_4$, $FeSO_4$. Establish the physical properties	0,5 p
2.	The salts reacts with metals, solubles bases, acides, and others salts. The salts descomposes at t^0C. Ilustrate with examples these reactions. Name the salts.	2,5 p
3.	Make the next experiments: a) $CuSO_4$ + NaOH b) $AgNO_3$ + HCl c) Na_2SO_4 + Ba Cl_2	3 p
4.	Make the transformations: Mg ⟶ $MgCl_2$ ⟶ $MgNO_3$	3 p
	TOTAL	1p+9p=10p

Initial test – for the group with level II

Nr. Crt.	**Subject**	**Score**
1.	We are given on the table the next salts: NaCl, $CaCO_3$, $AgNO_3$, $CuSO_4$, $BaCl_2$. Establish the physical properties	0,5 p
2.	Complete the equations of chemical reactions: a) $CuSO_4$ + … ⟶ Fe SO_4 + Cu ↓ b) $CaCO_3$ + … ⟶ Ca Cl_2 + H_2CO_3 ↓ c) Fe Cl_3 + … ⟶ NaCl + $Fe(OH)_3$ d) $CuCO_3$ $\xrightarrow{t^0C}$ … + …	2,5 p
3.	Make the next experiments: d) $CuSO_4$ + NaOH e) $AgNO_3$ + HCl f) Na_2SO_4 + Ba Cl_2	3 p
4.	Make the transformation: Cu SO_4 ⟶ K_2SO_4	3 p
TOTAL		1p+9p=10p

The final test for the group with level I

1) Name and classify the next salts: $KHCO_3$, $CaCl_2$, $CuCO_3$, $MgSO_4$, $FeCl_3$, $AgNO_3$, $NaHSO_4$, KF, $NaHPO_4$, $NaNO_2$. (4p)

2) Complete the table: (5 p)

Chemical property	Example	Uses
The reaction of salts with metals		
The reaction of salts with bases		
The reaction of salts with acids	$Ag NO_3 + \longrightarrow \ldots Ag Cl + \ldots$ ↓	The recognition Cl^-
	$Ba CO_3 + \ldots \longrightarrow \ldots + \ldots + \ldots$ ↑	The recognition CO_3^{2-}
	$\ldots + \ldots \longrightarrow Ca Cl_2 + CO_2 + H_2O$	The recognition …
The reaction …….	$Na_2SO_4 + Ba Cl_2 \longrightarrow \ldots + \ldots$ ↑	The recognition SO_4^{2-} and … acid
The reaction …….		Obtining the line
	$NaHCO_3 \xrightarrow{t^0C} \ldots$ ↑ $+ \ldots + \ldots$ ↑	……

TOTAL : 9p + 1p = 10p
Time: 20 minute

The final test for the group with level II

1) Encircle the correct answer: (1p)
Salts are:
   a) NaCl, H_2SO_4, NaOH,
   b) $NaHSO_4$, NaF, $CuCl_2$,
   c) HF, $MgCl_2$, NH_3.
2) A salt doesn't obtain through the reaction: (1p)
   a) HCl + Mg,
   b) Na + Cl_2,
   c) Ca + H_2O.
3) The name for $CuSO_4$ is: (1p)
   a) cooper sulphide,
   b) cooper sulphate,
   c) cooper sulphyte.
4) The salts are substances: (1p)
   a) solides,
   b) solides and gases,
   c) solides, liquides, gases
5) The lime is obtaining through the reaction: (1p)
   a) $NH_4Cl \xrightarrow{t^oC} NH_3\uparrow + HCl\uparrow$
   b) $Cu CO_3 \xrightarrow{t^oC} CuO + CO_2\uparrow$
   c) $CaCO_3 \xrightarrow{t^oC} CaO + CO_2\uparrow$

6) Na_2SO_4 is proceeding from (1p)
   a) oxyacid,
   b) hydracid,
   c) basic acid.
7) The general formula for salts is: (1p)
   a) $H^1_n A^n$
   b) $M^m_a A^m_a$
   c) $M^m (OH)^1_m$
8) $CaCO_3$: (1p)
   a) is the principal component of limestone,
   b) is the acid salt,
   c) the name is kitchen salt.
9) The bluishstone has the formula: (1p)
   a) $AgNO_3$,
   b) $CuSO_4$,
   c) $CuCO_3$.

Total: 9p+1p=10p.
Time: 20 minute.

Anexa.

The chemical properties of salts card of experimental activity

The name of experiment	**The tools, the devices the necessary substances**	**Mode by work**	**Obs.**	**The equations of chemical reactions**	**Conclusions**
$CuSO_4$ + Na OH	test tube, $CuSO_4$ aq, NaOH aq	Introduce 2-3 ml $CuSO_4$ in the test tub add NaOH aq			
Ag NO_3 + HCl	test tube, $AgNO_3$, aq, HCl aq	Treat in the test tub the HCl aq with the Ag NO_3 aq			The recognition reaction of Cl^- and HCl
Ba Cl_2 + Na_2SO_4	test tube, Na_2SO_4, aq Ba Cl_2 aq	Take Na_2SO_4 aq in tube test and add 3-5 ml Ba Cl_2 aq			The recognition reaction of SO_4^{2-} and H_2SO_4

The processing and the interpretation of the results

Table 3.
The results of the initial test

The class	The level of group	Nr. pupils	Pupils	Score									M / group	M of the all tests
				2	3	4	5	6	7	8	9	10		
VIII A	I A	10	Nr.	-	-	-	1	2	1	3	1	2	7,70	6,99
			%	0	0	0	10	20	10	30	10	20		
	II A	14	Nr.	-	-	2	2	3	4	3	-	-	6,29	
			%	0	0	14,29	14,29	21,43	28,57	21,43	0	0		
VIII B	I B	7	Nr.	-	-	-	1	1	1	2	2	0	7,43	6,67
			%	0	0	0	14,29	14,29	14,29	28,57	28,57	0		
	II B	11	Nr.	-	1	1	2	2	4	1	-	-	5,91	
			%	0	9,09	9,09	18,18	18,18	36,36	9,09	0	0		
VIII C	I C	14	Nr.	-	-	-	1	2	2	4	2	3	7,93	7,30
			%	0	0	0	7,14	14,29	14,29	28,57	14,29	21,43		
	II C	12	Nr.	-	-	1	2	2	3	3	1	-	6,67	
			%	0	0	8,33	16,67	16,67	25	25	8,33	0		

Table 4.
The results of the final test

The class	The level of group	Nr. Pupils	Pupils	Score									M / group	M of the all tests
				2	3	4	5	6	7	8	9	10		
VIII A	I A	10	Nr.	-	-	-	-	2	2	2	2	2	8,00	7,25
			%	0	0	0	0	20	20	20	20	20		
	II A	14	Nr.	-	-	1	2	4	3	4	-	-	6,50	
			%	0	0	7,14	14,29	28,57	21,43	28,57	0	0		
VIII B	I B	7	Nr.	-	-	-	-	1	1	3	2	-	7,86	7,02
			%	0	0	0	0	14,29	14,29	42,96	28,47	0		
	II B	11	Nr.	-	-	1	3	2	3	2	-	-	6,18	
			%	0	0	9,09	27,27	18,18	27,27	18,18	0	0		
VIII C	I C	14	Nr.	-	-	-	-	2	1	4	3	4	8,43	7,67
			%	0	0	0	0	14,29	7,14	28,57	21,43	28,57		
	II C	12	Nr.	-	-	-	2	2	4	3	1	-	6,92	
			%	0	0	0	16,67	16,67	33,33	25	8,33	0		

3. Conclusions

The didactic research had been effected in the academic year 2001 – 2002 and it had been included 68 pupils (VIIIth A, VIIIth B, VIIIthC).

The initial test had a double role:

-the report about the preparation level of the pupils,

-the determination of the difference level between those 3 classes.

The progress tests and the final tests followed the role of the modern evaluation strategy.

The role of the pupils evaluation through autoeducation cards is very efficient: it stimulates the independent pupils activity and it can apply in any moment of sequence by instruction.

We can consider the evaluation process as a principal activity of didactic technology. The existence of "absolutely" quantitative evaluation in learning teaching process seems to be an "utopia", evaluation which refers both activity as a part of different instructional sequence. A good teacher will know exactly how he realized the evaluation tests, centered on the operational goals.

It' s important for pupils to understand the concept during the class so that he can build himself the new information being quided by teacher.

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STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLVIII, 1, 2003

LE CONCEPT DE "REACTION CHIMIQUE" ET SES OBSTACLES

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ABSTRACT. The Concept of "Chemical Reaction" and the Corresponding Obstacles. Research carried out throughout several years pointed out the poor awareness of the concept of chemical reaction by pupils in the first highschool grades. The correct understanding of this overall concept implies identifying the obstacles, by activating them in actual learning situations and ultimately actively overcoming them by becoming aware under the teachers' guidance. This paper aims at sharing some results got in the process of activating the obstacle-ideas in terms of chemical reaction applied to 10^{th} grades. In order to activate the obstacle-ideas we need to devise thorough complex teaching strategies able to guide the pupils firmly through compulsory sequences, but at the some time, allowing pupils to express themselves freely in group discussions or by answering the teacher's questions. These questions are asked in order to centre the pupils' reflexive thinking towards those areas of knowledge which according to our hypothesis can turn into obstacles. Becoming aware of the pupils' obstacles teachers will be able to devise the most efficient and appropriate strategy, which should help the pupil all along the cognitive process of acquiring the overall concept of chemical reaction.

1. Introduction

Les instructions contenues dans le *curriculum* scolaire prévoient la construction progressive du concept de réaction chimique. Or des recherches en didactique, menées par Carretto, Viovy (1999), Goffard (1993) et Ciomoş (1997), ont montré qu'une proportion non négligeable des élèves ne maîtrise pas ce concept.

Trois hypothèses peuvent être proposées pour expliquer la mauvaise maîtrise du concept par les élèves.

-La réaction chimique est un concept intégrateur difficile qui nécessite de maîtriser simultanément un ensemble de concepts de la chimie.

-Dans l'apprentissage de ce concept central de la chimie les élèves se heurtent à de nombreux obstacles qu'ils ne sont pas en mesure de surmonter.

-Les stratégies didactiques des professeurs, qui sont soumis à une très grande pression par un programme de chimie très chargée, ne donnent pas aux élèves l'occasion d'exprimer les idées qui font obstacles aux apprentissages. Cela ne permettent pas aux professeurs de prendre conscience des idées-obstacles des élèves.

Le but de ce travail est de mettre en évidence et de mieux connaître les idées-obstacles des élèves à la construction de ce concept. La connaissance de ces obstacles à l'apprentissage devrait faciliter la construction par les professeurs des

situations d'enseignement pour aider leurs élèves à les franchir et leur permettre ainsi d'accéder au concept de réaction chimique.

Les travaux de didactique antérieurs à notre démarche et nos observations aussi ont été un point de départ pour nous. Néanmoins deux aspects ont limité leurs portées.

-Ils portent essentiellement, comme nous venons de le dire, sur l'analyse des représentations des élèves sur le concept de substance et celui de réaction chimique. Ces représentations n'ont pas été analysées en termes d'obstacles.

-Ces travaux n'envisagent que partiellement les effets des connaissances apportées par le cours de chimie. Ils portent surtout sur les conceptions des élèves avant l'étude de la chimie. La réorganisation qui se produit nécessairement dans l'esprit de l'élève conduit à l'émergence de nouvelles représentations liées à l'enseignement.

Les principales représentations recensées sont les suivantes.

-Les élèves procèdent à la reconnaissance des substances et des phénomènes à partir de leurs traits sensibles.

-Les élèves considèrent que les substances peuvent changer leurs propriétés tout en maintenant leur identité. Ils peuvent opter pour la présence des produits de la réaction dans les réactifs.

-Les élèves ne disposent pas du concept de corps pur dans le registre phénoménologique.

-Les élèves ne possédant pas le concept de corps pur, sa mise en relation dans le registre du modèle avec le concept de molécule ne peut être réalisée convenablement. Après une initiation à la chimie, les élèves assimilent les corps purs aux seuls corps simples; les corps composés étant assimilés à des mélanges de corps simples.

-Les élèves, qui ne possèdent pas le principe de conservation de la masse dans le registre phénoménologique, ne peuvent le mettre en relation avec celui de conservation des atomes dans le registre du modèle.

-Les élèves conçoivent, dans le registre macroscopique, les réactions chimiques en termes de destruction, de disparition de substances (centration sur les réactifs). Les interactions entre les réactifs conduisant à de nouvelles substances ne sont pas envisagées. De même, dans le registre du modèle, la réorganisation des atomes qui aboutit à la formation d'une ou plusieurs molécules différentes de celles des réactifs n'est pas perçue.

2. Démarche didactique

Notre démarche a été centrée sur les élèves de X-ème. Nous avons construit des différentes situations d'enseignement pour activer et mettre en évidence de nouvelles représentations et raisonnements spontanés que nous avons extraits des formulations récurrentes des élèves.

Dans le tableau 1, ces représentations et modes de raisonnement spontanés ont été repris avec une formulation plus concise mais aussi plus opératoire. Ils ont été élevés au rang d'obstacle car les schèmes de pensée qu'ils constituent permettent

d’une part aux élèves de construire des raisonnements pour répondre à des questions qu’ils se posent (obstacle-facilité); d’autre part, ils peuvent aussi leur barrer l’accès au savoir scientifique en les empêchant de comprendre, de construire certains concepts (obstacle-difficulté). Dans ce tableau, nous avons pris le parti de classer ces obstacles en quatre catégories dans un souci de clarté d’exposition mais aussi parce que nous pensons que ces obstacles sont de natures différentes (bien que certains obstacles puissent par certaines facettes appartenir à plusieurs catégories).

-Les obstacles liés directement à la perception se distinguent des autres car ils sont la conséquence directe de la primauté du sensible sur la conceptualisation.

-Les obstacles liés indirectement à la perception résultent d’une vision de l’ensemble des transformations de la matière comme de simples réalisations ou séparation de mélanges ou encore comme des combustions (lorsqu’il y a une flamme ou une incandescence). Ils permettent une économie de pensée dans le cas des réactions chimiques. Ces représentations sont aussi liées à un attachement au sensible mais au second degré car elles demandent une première conceptualisation (dans ce cas, les élèves doivent avoir construit préalablement les concepts de mélange et de combustion).

-L’absence de maîtrise de certains concepts peut devenir un obstacle à la construction de concepts intégrateurs comme celui de réaction chimique. Dans ce cas, l’obstacle prend un autre sens par rapport à ce qui a été vu précédemment : il peut être assimilé à une lacune.

-Les obstacles liés à des modes de raisonnement se distinguent des autres car ils correspondent à des modes de mises en relation d’informations qui sous-tendent des raisonnements. La plupart de ces obstacles ne sont pas spécifiques à la chimie; ils sont transdisciplinaires.

Après avoir étudié le thème présenté dans le manuel de chimie de X-ème "Les lois de la chimie. La réaction chimique – phénomène chimique", nous avons choisi comme objet de notre enseignement la réaction chimique suivante:

$$2\ PbO + C \rightarrow 2Pb + CO_2$$

Nous avons élaboré un protocole expérimental en collaboration avec les élèves. La stratégie didactique a consisté à engager les élèves, en les encadrant, dans une démarche expérimentale qui leur permet de passer, par eux-mêmes, de la réaction chimique à son équation-bilan.

Par une série de situations expérimentales et de questionnements, nous les avons guidés vers certaines questions que nous voulions qu’ils se posent afin qu’ils se heurtent à certaines idées-obstacles. Ces passages obligés font suite ou précèdent des expériences (proposées par le professeur ou par les élèves) qui ont pour but, pour certaines, de les surprendre et ainsi d’améliorer la dévolution de la situation. Ils sont au nombre de trois et sont situés:

-après la mise en évidence expérimentale de la perte de masse;

-avant la caractérisation du gaz formé;

-après la mise en évidence de la non-intervention du dioxygène de l’air.

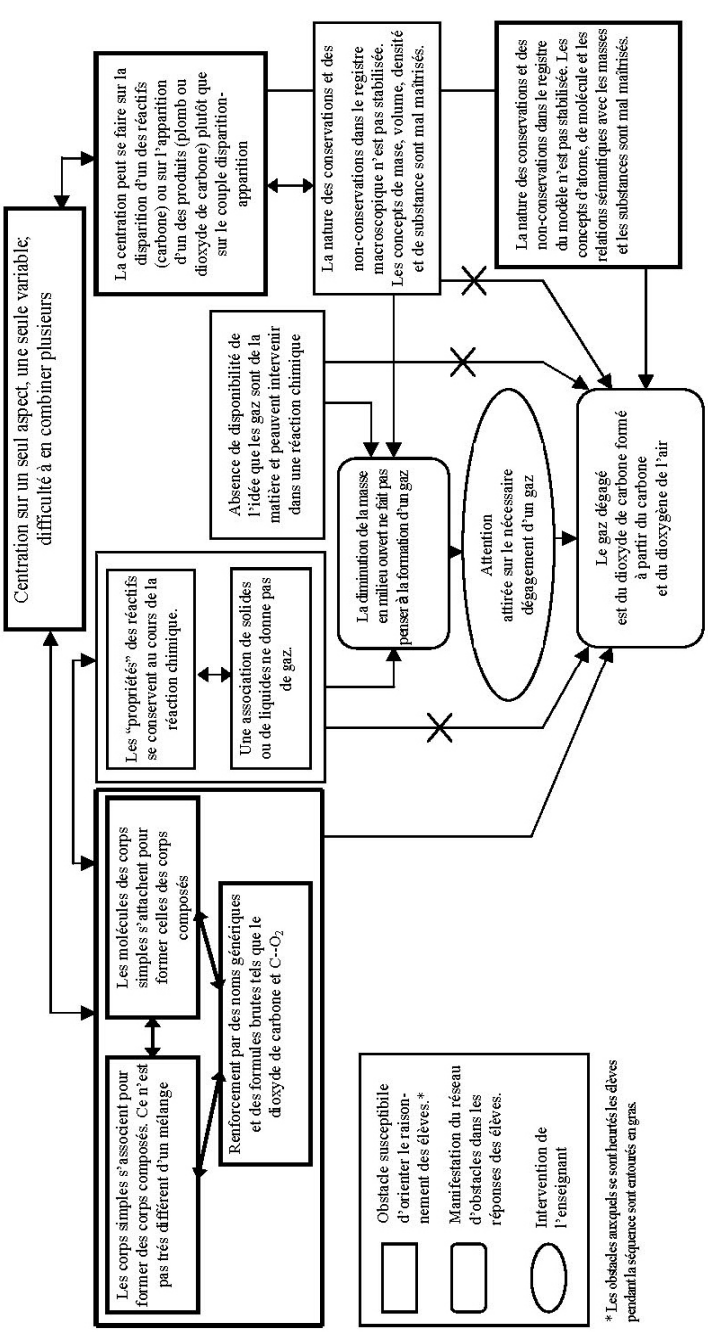
Tableau 1.

Classification des obstacles

Registres	Obstacles liés directement à la perception	Obstacles liés indirectement à la perception	Obstacles liés à l'absence de maîtrise de certains concepts	Obstacles liés à des modes de raisonnement
Macros-copique	1. La mise. En présence de substances solides et liquides ne peut donner des substances gazeuses. 2. L'idée que les gaz sont de la matière et qu'ils peuvent intervenir dans une réaction chimique n'est pas disponible.	3. Les réactions chimiques sont envisagées comme des réalisations ou des séparations de mélanges. Les corps purs composés sont des mélanges de corps purs simples; ces derniers conservant leur identité et certaines de leurs propriétés dans les corps purs composés. 4. Quelle que soit la réaction chimique, la formation de certains corps composés résulte souvent de prototypes. Par exemple: la formation de dioxyde de carbone résulte de la combustion du carbone dans le dioxygène. Cette représentation peut être renforcée par le nom et la formule chimique du corps composés.	6. Les concepts de masse, volume, densité ainsi que le principe de conservation de la masse au cours d'une réaction chimique ne sont pas maîtrisés.	8. La difficulté à construire des raisonnements à plusieurs variables conduit à privilégier des raisonnements à une seule variable. Cela donne lieu en chimie à la centration sur un seul réactif. 9. Des généralisations abusives (par extension du domaine de validité d'une connaissance, d'un concept ou d'un modèle) sont réalisées.
Micros-copique modèle		5. Au cours des réactions chimiques, les molécules des corps simples ne font que s'accoler pour former les molécules des corps composés (ou inversement). Cette représentation permet une traduction des représentations 3 et 4 dans le registre du modèle.	7. Les concepts de molécules et d'atomes ainsi que le principe de conservation des atomes au cours d'une réaction chimique ne sont pas maîtrisés. Les relations sémantiques entre les concepts et les principes des deux registres (macroscopique et microscopique) ne sont pas encore stabilisées.	10. La recherche d'une "symétrie" par permutation (à partir des noms des corps purs et aussi des atomes contenus dans les molècules des réactifs et des produits) est privilégiée dans les raisonnements en raison de son aspect séduisant pour l'esprit.

Tableau 2.

Le réseau d’obstacles



A chaque fois, le questionnement a pour but de recentrer la réflexion des élèves sur un point du savoir dont nous avons fait l'hypothèse qu'il devait permettre l'activation d'idées-obstacles. Par une gestion de classe variée, les élèves ont été placés en position d'exprimer personnellement leurs idées et de les confronter à celles de leurs camarades lors de discussions de groupes ou en classe entière. Cette dynamique d'ensemble conduit les élèves à un véritable travail sur les obstacles.

Finalement, nous avons organisé les résultats obtenus et, pour visualiser l'activation de certaines idées-obstacles nous avons constitué le réseau d'obstacles en tableau 2.

Dans ce réseau, lorsqu'une réponse d'élève est la manifestation d'une ou plusieurs idées-obstacles, nous avons lié par une ou plusieurs flèches les différentes idées-obstacles et leurs manifestations dans la réponse de l'élève. Lorsque certains obstacles empêchent l'émergence de certaines formulations, nous avons barré les flèches. Par exemple, l'absence de stabilité du principe de conservation de la masse empêche l'émergence de la réponse "un gaz s'est échappé".

Les idées-obstacles du réseau auxquelles se sont heurtés les élèves observés ont été entourées d'un rectangle gras. Elles ne représentent qu'une partie de l'ensemble des idées-obstacles potentielles auxquelles peuvent être confrontés les élèves de X-ème dans une telle situation.

3. Conclusion

Notre analyse a montré que le passage du phénomène observable que constitue une réaction chimique à son équation-bilan, qui en est sa modélisation, n'est pas naturel et spontané pour les élèves. Le placage de l'équation-bilan sur le phénomène de la réaction chimique, sans réelle réflexion de la part de l'élève esquive une confrontation avec des obstacles qui est nécessaire à la construction du concept de réaction chimique. Seul un passage raisonné et conscient d'un registre de description à l'autre, réalise par les élèves, peut leur permettre de surmonter les obstacles et de construire réellement le concept. En ce cas après plusieurs discussions de groupes certains élèves ont surmonté eux-mêmes les idées-obstacles. Les autres ont eu besoin d'aide supplémentaire de la part du professeur.

La stratégie didactique que nous avons utilisée permet aux élèves le passage du registre macroscopique au registre microscopique (du modèle), ce qui les amènera à mieux construire le concept de réaction chimique. En même temps, cette stratégie didactique permet aux élèves de se poser des questions mais aussi de laisser entrevoir ses représentations au professeur.

Finalement, la connaissance des idées-obstacles permettra aux professeurs de trouver les meilleures stratégies didactiques pour les travailler avec les élèves en les aidant les franchir.

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RECENZIE - BOOK REVIEW

Muşata Bocoş, *Cercetarea pedagogică. Suporturi teoretice şi metodologice,* Editura Casa Cărţii de Ştiinţă, Cluj-Napoca, 2003

Statutul de ştiinţă al unei discipline sau ramuri a activităţii de cunoaştere este asigurat de domeniul propriu de studiu, de limbajul ştiinţific utilizat, de metodologia şi instrumentarul proprii, precum şi de legităţile şi predicţiile formulate. În cazul particular al pedagogiei - ştiinţă care studiază domeniul complex al educaţiei, cercetarea pedagogică joacă rol primordial în consolidarea statutului său de ştiinţă şi în asigurarea dezvoltării sale epistemice.

Putem vorbi nu doar despre un interes firesc pe care specialiştii teoreticieni şi practicieni îl acordă cercetării pedagogice, ci despre un interes general pentru aceasta, datorat faptului că fiecare din noi are legături directe sau indirecte cu fenomenele educaţionale. Dacă mai adăugăm faptul că reforma educaţională actuală presupune un interes special în direcţia realizării de cercetări pedagogice, care stau la baza schimbărilor din educaţie şi care induc inovaţiile educaţionale, importanţa şi necesitatea temei cărţii la care ne referim, sunt argumentate.

Cu denumirea *"Cercetarea pedagogică. Suporturi teoretice şi metodologice"*, cartea porneşte de la premisa formulată de autoare pe coperta IV, că promovarea cercetării pedagogice asigură multiplele conexiuni intra-, inter- şi transdisciplinare ale componentelor sistemului ştiinţelor educaţiei, conlucrarea acestora, pentru ca astfel să se soluţioneze, parafrazându-l pe Jean Thomas, micile şi "marile probleme ale educaţiei", la nivel de sistem şi de proces.

"Răspunzând" titlului cărţii, autoarea şi-a structurat discursul şi consideraţiile în şase capitole, cărora li se adaugă o secţiune de exerciţii aplicative, lista bibliografiei consultate şi anexele lucrării.

Capitolul I, intitulat *"Statutul şi rolul cercetării pedagogice"* ne oferă argumentarea importanţei investigaţiilor pedagogice ştiinţifice, caracterizarea generală a cercetării pedagogice şi inventarierea funcţiilor sale, precum şi diverse modalităţi de clasificare a acesteia.

Capitolul II este consacrat în întregime discutării etapelor şi demersurilor pe care le presupun cercetările pedagogice, într-o manieră reflexivă, care îndeamnă cititorul să comunice cu el însuşi, să ofere răspunsurile proprii la întrebările concrete formulate şi să manifeste spirit critic în raport cu anumite idei, opinii etc. Remarcăm, de asemenea, ilustrările concrete şi exemplele care fac ca lectura textului să reprezinte un demers facil şi productiv.

Importanţa acţiunii de eşantionare, a cunoaşterii modalităţilor de eşantionare şi de realizare a sondajelor, au determinat-o pe autoare să le dedice un capitol separat - capitolul III.

Cel mai extins capitol al lucrării - al IV-lea, abordează *"Metodologia cercetării pedagogice"*, respectiv trei componente de bază ale acesteia - sistemul metodelor de colectare a datelor cercetării, sistemul metodelor de măsurare a datelor cercetării şi sistemul metodelor de prelucrare matematico-statistică a datelor cercetării, fiecare cu subcomponentele sale principale.

Maniera de prezentare este clară, sistematică şi riguroasă, deşi nu lipsesc consideraţiile şi contribuţiile personale ale autoarei. Spre exemplu, remarcăm în subcapitolul IV.2. tratarea metodei autoobservaţiei ca metodă de sine stătătoare, pentru a i se sublinia importanţa şi nuanţarea denumirii unor metode funcţie de contextul educaţional general actual (ne referim la "metoda analizei portofoliilor/

a produselor activităţii subiecţilor educaţiei" şi la "metoda cercetării documentelor curriculare şi a altor documente şcolare").

Subcapitolele IV.3. şi IV.4. sunt, de asemenea, bine structurate şi articulate şi bogate în ilustrări concrete, astfel încât se reuşeşte oferirea unei orientări şi a suporturilor teoretico-metodologice şi matematico-statistice minimale necesare unui cercetător în domeniul ştiinţelor educaţiei. Diversele exemple oferite pentru metodele şi demersurile prezentate, îi conferă lucrării valoare de instrument metodologic şi îi asigură aplicabilitatea practică.

În capitolul V sunt surprinse şi analizate interrelaţiile dintre cercetarea pedagogică, reforma şi inovaţia în învăţământ, oferindu-se clarificări conceptuale utile.

Ultimul capitol, intitulat elegant şi sugestiv - "Pentru o epistemologie a cercetării ştiinţifice în educaţie", se doreşte a fi un imbold adresat cadrelor didactice, studenţilor şi altor categorii de resurse umane implicate în educaţie, de a realiza, în mod sistematic, cercetări pedagogice, mai mult sau mai puţin pretenţioase. În egală măsură, capitolul îşi propune să construiască o viziune generală asupra complementarităţii fireşti dintre cercetarea pedagogică şi practica educaţională şi asupra rolului cercetării pedagogice în reglarea, autoreglarea şi autooptimizarea sistemului de învăţământ, a activităţii educaţionale şi asupra rolului de factor de promovare a progresului general în educaţie, la scară mai largă. Capitolul se finalizează cu inventarierea unor elemente de bază în cristalizarea unei epistemologii a cercetării pedagogice, analizate cu spirit activ şi critic.

Secţiunea de "Repere pentru reflecţie şi activitate aplicativă" conţine exerciţii calitative şi cantitative care îndeamnă, explicit, la reflecţie personală, la autoanaliză, autoinvestigare, autochestionare etc., precum şi la efectuarea de determinări cantitative efective. Astfel, această secţiune deţine o importanţă specială pentru asigurarea caracterului de instrument de lucru al cărţii.

Considerăm că prin intenţie, atitudine şi abordare, autoarea a reuşit să ofere celor interesaţi un autentic ghid pentru cercetările pedagogice, axându-se pe elementele minimale necesare acestuia, explicitându-le într-o manieră modernă, care să ţină cont de actualele paradigme pedagogice şi prezentându-le în manieră clară, condensată şi, în acelaşi timp, comprehensivă.

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