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CREATIVITY ISSUES WITHIN CONTEMPORARY PEDAGOGY

DUMITRU SALADE

ABSTRACT. The study focuses on the different aspects of pedagogical creativity and, in connection with this, on the acceptance of novelty in educational practice.

The author attempts an answer to the question: What do the school, education and teachers expect from the representatives of psycho-pedagogical objects with regard to the nourishment stimulation and training of creativity? At the same time an inventory of the difficulties encountered while training creativity is also made.

The necessity of achieving a sound, scientific training of creativity is underlined, alongside the elaboration of a pedagogy of creativity.

The educational sciences similarly to others which have focused on creativity as well, like psychology, sociology, philosophy, ethics etc. had long ago surpassed the stage that usually initiates the approach of a new issue: defining terminology, settling conceptual boundaries, new significance for a certain notion etc. and have covered significant ground in debating over and specifying some important aspects of creativity such as: its complex interdisciplinary character, creativity as a dimension of the contemporary human being, the functions and factors of creativity, its level (of expression, production, inventivity innovative, energizing), its stages - preparation, incubation, illumination- and others.

1. The concept

"Pedagogical creativity" has recently become a study topic of research object for mixed research teams (psychologists, educators, sociologists). The result attained is to be included among the prioritary applications of educational sciences.

The issue of attitude to creativity and novelty is not a matter of age, of generations, nor is it one of mentality, political or cultural regime as it is sometimes suggested, but it is a matter of education, of preparing man for the production and acceptance of novelty as an index of progress, as a result of scientific research, of human innovation and creativity.

Moreover "trainer trainers" have to cultivate the future educators' aptitudes and there creative capabilities as well as those of restructuring the whole work technique rooted within their activity domain and integrate it into a dynamic, flexible and efficient system.

The debate over such a controversial problem as the acceptance of novelty in the pedagogical practice originated in the thesis that any educator has to be an agent of change, of introducing the new in their daily activity, if not for other reason, at least for that which is fact of the peculiarity of there profession, that is preparing the specialists of tomorrow and that these people have to prove creative in there positions, according to the development of society and self-esteem demand. Among the concrete achievement of our school so far, at least two should be mentioned:

a) acknowledging the priority of this topic, its importance and up-to-dateness for contemporary education and not only for this;

b) new cooperation of different specialists with regard to maximizing its efficiency in ever expanding circles.

The research carried out by well-known personalities on creativity such as:

A. Osborn, I.A. Taylor, E.P. Torance, A.N. Whitehead, A.B. Cattel, J. Guilford, W. Terman and others constituted an encouragement and stood for the first measures taken by our school as well. The fact that Romanian psychologists, educators, sociologists and philosophers like Al. Rosca, P.Popescu Neveanu, A. Stoica, M. Rocco, N.C. Matei, G.R. Nicola, I. Radu, M. Ionescu, L. Topa, I. Moraru and others have published a series of works on creativity constitutes an argument and, at some time, a stimulus for the consolidation for his place and status within pedagogy.

A series of educational objectives considered important until recently have become secondary once the issue of creativity was raised. It soon become a "present day" preoccupation, but in spite of these, creativity preserved for some time its initial stage, that of "waiting" and marking its place, forms structures, content, within the classical order of educational components.

Rapidly accepted as a "North Star", creativity has set for many specialists a far more complex problem then they realized at first sight. The process of theoretical elaboration of all the components of "pedagogical creativity" lies on the working bench of specialists together with other "novelties" meant to restructure and reorganize the domain of education. Some of them are the pedagogical projection of creativity, educational management, conceiving adequate syllabi and models to our educational system: Computer Aided Training etc.

Integrating novelty within old structures pre-supposes a new hierarchy, a new setting of the elements and content and such a thing is attained with difficulty because "the old" keeps its place, manifesting inertly to some extent. In addition, the different approach by the different subjects to novelty sustains the idea that not all its components have yet taken clear contour or defined.

In spite of all these, during the last decades the issue has met with remarkable, accented development. Important progress has been achieved with regard to the methodology of applying these results in school practice as well.

The setting of new institutes, foundations, associations, clubs, a.s.o. that aim at helping and stimulating creativity in different domains represents an obvious sign of the progress registered along this line (E. Coanda Foundation is in itself an example). The fact that some text books, treatise, courses or papers addressed to teachers included some chapters or sub-chapters on creativity obviously demonstrated that the issue started to expend and has become a priority for the scientific and decision forums of education as well.

The numerous public manifestations (debates, Symposia, exhibitions, TV programmes, meetings, congresses) dedicated to the human creativity represent means of drawing the attention of different categories of specialists on this issue.

2. If this is the situation within the science of education, there still is the question: What does the school, education and teachers expect from the representatives of psycho-pedagogical subjects with regard to educating creativity, stimulating and cultivating it? The answer: Two important things that are:

a) a synthesis on the results obtained so far in this domain and

b) the elaboration of an efficient methodology which should accelerate and ensure a real progress in educating creativity.

Works such as those of A. Paré (Canadian educator) entitled "Créativité et pédagogie ouverte" (3 vol. 1977), or the more recent work of Samuel Amegan: "pour une pedagogie active et creative" (2nd ed., 1993) an a carry on the investigation and turn to good account there results within the process of specialists training, modifying the classical teaching style of the trainers.

The analyses carried out with regard to the three aspects of creativity: the creative process, the product of the creative activity and evaluation of the results of this activity have contributed as well to the enrichment of the strategies and specific methods of this sector. These are several other problems which remain still open waiting for a solution such as: defining the objectives of pedagogical creativity, the elaboration of such models, the pedagogical design of creativity, educational management of creativity etc.

Objectively, while training creativity, great difficulties are encountered because not all factors intervening in this process are known, the mechanisms leading to the "manufacturing" of the results of creation are not known, nor are the existing reports between the conscious and unconscious, the affect and the intellect, the individual and the social within the process of creation. In simulating creativity and within educating it, ensuring favorable circumstances for the arousal of interest and passion, of the "permanence of preoccupation" is of great interest alongside fighting against prejudice and inhibiting factors which might hinder the free manifestation of capacities, attitudes and aptitudes of individuals.

The science of education speaks about the importance of a creative and stimulative environment (tonic, optimistic, calm, good mood, enthusiasm and passion), which the school has not yet succeeded to ensure. Then, a creative attitude of the team leaders, of educators in schools accented development of

motivation, especially of intrinsic nature, as well as turning to good account the new positive creative experience of groups or of individuals in this domain are highlighted.

With regard to fighting against prejudice some really harmful ones could be mentioned. There exists the opinion that the creative potential of a person will lead to achievement "by itself" irrespective of condition. It is sustained that it is enough to stimulate logical and critical thinking in order for the expected results in the domain of creativity to appear the creative attitude implies the rejection of dogmas, of conformism and rigidity.

To manifest initiative to discover new things, to enrich the significance of things and phenomena, to discover new relationships and functions, to achieve original synthesis are desiderata, which effectively sustain a creative attitude.

Training creativity has to become even more so a central issue since the demands of economy (privatisation, market economy competition, the increase of efficiency and quality) are ever more numerous and pressing. Obliged to respond to the demands of "the market", the intellectual education, for example alters not only its objects but its structures and strategies as well. Trained already in school to solve some complex (theoretical, practical, organizational and economical) problems, the students, will correctly sense the significance of some domains of activity and will be aware of assimilating a series of elements compatible to their professional options, to their desired creativity.

3. Briefly, "creatology" is a subject but recently constituted, similarly to "inventic", or the "Psychology of Creativity". They have become subject taught in some faculties of our higher education (e.g. The Technical University of Iaşi), thus contributing to the stimulation and development of the creative capability of the future specialists.

It is obvious that pedagogy and educational sciences have not responded passively to this demand and "offer" and have even tried to elaborate some concrete programmes and a pluridisciplinary strategy for the training of creativity. Moreover, some thesis such as those of Blaga, Botezatu, Rosca, Robertson, a.o., with reference to the cultivation of creativity have turned into yardsticks and important norms for education. Here are some of these thesis:

" The creative human being is the unique being that has the right to be futile, just like a lily, but he himself, more than anyone else is ready to regard his work as a priviledge. This means that only a creative human being successfully contradicts the usual acceptance of work which an intimate quite common feeling condemns, while the usual doctrines do not succeed to restabilizate it with certainty." (L. Blaga) or *"There are, today, enough proves that with any normal person, creativity can be developed, to a lesser or greater extent, one way or another" (Al. Rosca) or " Life is received through creation"* and *"Creativity has to manifest itself at the level of all university subjects and departments"* (P. Botezatu) or *"… for the progress of humanity, it is not so much our intelligence, our talent that are important but especially the way in which these are employed.*" (B. Robertson).

Training creativity by means of stimulating creative thinking, by cultivating the psychological factors (intellectual, affect ones), the social ones, (cultural, artistic etc.), biological ones (age, sex etc.) which facilitate creativity and stimulating some favorable circumstances for the development of creativity such as: a stimulating phyco-social environment, cooperation relationships, involvement in constructive activity represent major objectives of any modern education. At the same time, employing the usual methodology developed, educating creativity will heighten the schools interest in this issue and will facilitate the implementation of a more active attitude towards it.

The invasion of computers of different types and of the modern modalities of ensuring quality training for the different categories of citizens (through technical means, distance courses, self access etc.) contribute to the acceleration of progress in this priority domain and social life.

But for the achievement of the sound education of creativity carried out scientifically or for the introduction to the educational sciences of the objectives principals, methodology and forms of achieving creativity, this still are intricate roads to be persuade brighter and darker ones, these still is serious scientific research to be carried out with optimum results to be obtained, applied and turned to good account.

STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLIII, 1-2, 1998

HIGHER EDUCATION PEDAGOGY - A STRINGENT NEED

MIRON IONESCU*

ABSTRACT. The article focuses upon the present problems of the pedagogy of higher education and aims at proving that academic education should concentrate not only upon the training and development of the would be specialist, but of the man who tomorrow should actively be integrated in the society of the future.
Among the main topics and concerns of higher education some are paid more attention. They are: changing the ratio between the informative and formative in favour of the latter; training undergraduates by heuristical methods; achieving permanent education aims and making education more democratic.
Another part of the article deals with the actions of the teachers and students, mainly lectures and seminars, whose efficiency and methodological potential are pointed out. In the end, the author drays the attention upon some organisational measures taken to nationally increase higher education effectiveness.

The pedagogy of higher education became an independent subject at the beginning of the 20th century due to the specific demands of higher education in so far its theory and practice were concerned. Its main objective consists in the scientific analysis and improvement of educational activities in higher education, with reference to practical, theoretical and scientific research training. Today a new approach to the understanding of higher education can be encountered, which derives from the need of considering social reality (be it spiritual or economic a.s.o.). This adds to the formerly supported idea of some philosophers, who claimed that university should exclusively train people to become scientists or researchers. The new approach takes into consideration the impact of the academic life upon society as a whole and it sees universities as factors of change in society and of its members, too, because of the value-aimed directions, cognitive techniques, attitude, behaviour or even action patterns higher education can offer.

Besides scientific research and products which are essential for academic life, universities play a special role in the formation of the spiritual personality of undergraduates and in their professional training. In other words, universities not only supply knowledge, but are also responsible for the general development of the citizens required by society.

"University education" is a sintagm which should be met in the practical and theoretical concerns of the teaching staff, as a stage belonging to institutional educational development. It has specific aims to reach, related to the students' age and status and it has specific output in the social life and work of the youth.

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The achievement of the specific tasks of higher education depends upon the intellectual power of the students and upon their cognitive level, intellectual and practical capabilities they possess, all these affecting the degree to which new knowledge and skills are acquired, made functional and operational.

The general educational background is the basis upon which tertiary education builds speciality knowledge related to the specialization attended to relate to social life: economic, technical, juridical, political, administrative, health care, education, research, art, a.s.o. Specialty does not hinder the balanced development of other personality components in students, such as the intellectual, moral, civic, aesthetic etc, but it is enlarged by means of the acquisition from fields such as those of philosophy, pedagogy, sociology, psychology, ethics, politics, literature, arts, foreign languages, research methodology etc.

Formative objectives refer to developing the mind operations, analysis, synthesis, comparison, abstract thinking, generalizations, then to enlarging scientific research and critical thinking, skills for independent work as well as to forming and educating the desire of discovering new aspects by the students' own effort, of self-development and self-training, thus the basis of permanent education.

Shortly, the main guidelines and concerns of present-day university pedagogy which aim to reach its main objectives are: **changing the ratio between the informative and formative in favour of the latter; training undergraduates by heuristical methods; achieving permanent education aims and making higher education activities more democratic.**

General guidelines can be used to formulate methodological recommendations, valid for all the subjects studied, but also some particular ones, with reference to the most adequate organisational, development and assessment methods which could improve academic efficiency.

During tertiary education, undergraduates make acquaintance with the essence of science, in a really scientific workshop where the teacher is the supervisor and challenging partner. That is why the teacher should not limit his teaching to a presentation of his own knowledge but should rather make students become more active in learning from the "live force" which is science. We must be aware that higher education cannot and should not produce scientists. However, universities should train students in the scientific research and work methods and form those abilities and skills which are significant for their future profession together with the training in information and scientific research techniques. Such a background awareness the students' passion and respect for science.

Pragmatically speaking, **teaching methodology** has a primary role to play in an active, formative and authentic higher education. Both traditional and up-to-date types of activities carried out by the teachers and students must pay attention to a balanced ratio between information and methodology, the informative and formative, with a special emphasis on the latter.

To form the skill of recreating and reproducing, certain values requires specific learning, which trains people to adapt to social reality, to express their attitude in front of the unexpected. Innovating, inventing, seeing things rationally cannot be induced by simple emission, reception or storing of a larger and larger volume of information and by memory exercises. Such aptitudes and skills are

formed when intelligence, divergent, heuristical thinking, imagination, creativity and incentives to be receptive to new aspects are present.

At present, higher education cannot be mainly seen as a process of transmission - reception of information. It must be an effort to train students in problem solving and in using it to get information and to learn. That is why updating and upgrading curricula and syllabi are not possible without showing concern to change methodology.

Information and methods, the informative and formative are tightly connected together in both traditional and modern teacher-student activities. Jerome Bruner mentioned that "we teach a subject not to produce small-sized living bookshelves, but to make the student think alone, mathematically and to make him approach a topic from the same historical angle, i.e. to learn how to acquire knowledge. Knowledge is a process, not a product". Underlining the formative side of higher education does not mean to pay less attention to methodology.

Some of the main actions of the teacher and student which can contribute to a more efficient higher education will be further on discussed.

The academic lecture - as any expository teaching method - is subjected to substantial innovations, imposed by the fact that the knowledge is delivered ex-cathedra, logically, fluently and consistently. This sort of activity is focused upon the teacher who "delivers" the course, while the student "receives" the information, sometimes by merely jotting-down notes, and postpones the filtering of information through his or her own thinking up to a seminar, a session or exams or even forgets about it.

In spite of this, economicity and efficiency are present as a short time is required to transmit a large volume of data, the data are read, structured and systematized by the teacher; the lecture is also a pattern for approaching a topic, phenomenon or complex process, a means of facilitating the acquaintance with the method of research in nature and society as well as a procedure of accustoming students to critically approach a new topic and of thinking it over.

It has a deep meaning, it can persuade, it has an emotional background. All these lead to understanding and accepting of norms and moral-civic values, so that the lecture forms convictions, attitudes and behavioural patterns.

Lectures are among the most important academic activities. Though so valuable, they still require improvement some ways of updating a lecture are:

- It is important to conceive a lecture to be delivered in such a manner as to induce students to think about its content.
- The information quantity should be lessened so that only the essential, valuable and well selected data are conveyed through a dense cognitive message.
- Lectures should contain issues which could contribute to forming attitudes and behaviours necessary for job performance.
- Lectures should contain active teaching methods, such as:
  - lectures with questions and answers;
  - lectures based on dialogues;
  - lectures based on debates;
  - intuitive demonstrations which use auxiliary teaching equipment;

- computer-based modellings;
- dialogues initiated from opinions, questionnaires etc;
- group work discussions;
- starting lecture delivering from problem-questions, problems to be solved, hypotheses, comparisons, counterarguments, thesis-antithesis, statistical data, diagrams slides;
- initiating discussions during lectures.

- Lectures should be combined with other types of activities: seminars, practical works, laboratory works, where students should be stimulated to express their points of view and opinions or correct one another. Individual, independent, intellectually challenging tasks should also be included.

The academic seminar is the most important joint activity of the teachers and students where higher and specialty education is carried out. It is also a final balance of the independent activity of the student and way of controlling how much and how well the learning took place.

The seminar efficiency depends on: the forms and procedures of development , the level of the students, the psycho-social environment, the ability of the seminar leader to activate the students, the number of the students in the group.

Experience outlines the seminar sort which is characterized by a leader who guides the debates according to the topic plan, careful to meet the objectives and to involve students in the learning activity.

It is known that a seminar should be well managed by the leader. Theoretically and practically, the content of the seminar should not repeat the lecture content, but should be used to explain and deepen the ideas delivered in the lecture. The seminar plays the role of an environment for a more complete study, where new aspects are pointed out and scientific research methods are tackled. In a seminar, students must be given the opportunity to expressing opinions, having a dialogue, putting questions and receiving answers and formulating points of view.

Depending upon the year of study, the topic, the subject, the aims of the teaching activity, the seminars should also be developed as “a dialogue in pairs”, “a debate”, “a for-against argument” etc.

Seminars are classified according to their functions: of orientation-integration, of information, of training, of communication, of socializing, of operation, application, assessment and feed-back as well as according to the structure, objectives, content, training methods, techniques and procedures, controlled or not-controlled learning, progress or achievement assessment and potential improvement projects.

Among the most efficient types of seminars, we would like to mention below the following:

- introductory seminars;
- in-depth learning seminars based on:
  - reports and discussions;
  - debates according to previously planned structures;
  - dialogue;

- opposite groups;
- problem-solving.

- research seminars:
  - exegetic/hermeneutical;
  - creative group-work.
- practical seminars, based on:
  - case-study;
  - role-play;
  - the use of the professional and social expertise of the students.

Seminars can be made more efficient by:

- Academic staff should use those methods which could enable undergraduates to discover by themselves what is new and should be learnt. Such methods avoid the situations when students are "spoon-fed" with answers to their questions and could help them find their own answers. Such heuristical techniques are advantageous because of two reasons:
  - firstly, information discovered independently is organised in a more systematic and flexible manner;
  - secondly, knowledge is acquired in an active manner, the students' cognition develops together with their intellect, insight, acumen and creativity.
- Group-work activities should be implemented to solve problems related to social groups or to knowledge as in:
  - case-studies;
  - role-plays;
  - training groups;
  - intensive meeting group;
  - briefing groups;
  - incentive groups.
- Group-work discussions should be used, in the techniques:
  - progressive discussions;
  - free discussions;
  - risk-taking;
  - 6/6 Phillips;
  - panel discussions;
  - group colloquium;
  - forums;
  - group interviews;
  - buzz-sessions.
- The creativity of student groups can be stimulated by:
  - brainstorming;
  - sinectics;
  - brainwriting or 6/3/5;
  - individual or group diary writing;
  - sleep-writing;
  - groups of opposite parties.

- Assessment, self-assessment and evaluation mechanisms developed in higher education could lead to an autonomy in evaluation and in using both mixed assessment forms (practical, oral, written exams, colloquia) as well as assessment criteria typical of university activities
- A more democratic framework for the relationship between the academic staff and undergraduates could lead to a better communication, both from the affective and social viewpoint.

We would like to continue with our recommendations for higher education methodology, by mentioning some management measures already taken nationally in view of improving academic life:

- **A larger range of opportunities** could better meet the requirements and interests of a larger part of the young generation. Faculties, colleges, graduate and postgraduate studies are already known. There is also likely to have community higher education, able to train students to serve the needs of a certain community.
- **The candidates should be rigorously selected** during their entrance examinations, final graduation exams, master or Ph.D. exams, using objective criteria, to point out the actual competence, skills and capabilities of the students.
- **The European Credit Transfer System** (ECTS) which has started to be implemented has a wide range of advantages, among which we list:

  - ECTS provides a flexible individual study program within the curriculum;
  - ECTS facilitates the law-based access of students to courses delivered in universities at home or abroad;
  - ECTS provides the transfer of credits between various specialisations and profiles;
  - the credits are transferable between universities, according to subjects, modules or lengths of study.
- **The curricula should contain optional and elective course packages**.
- **The computer-aided education should be used in university**.
- **E-mail and Internet access** must be provided to students.
- **Scientific student meetings** should be more organized.
- **Exchange of students working in universities at home and abroad** should be achieved.

As a conclusion, we would like to underline the fact that the student's statute as an agent of change yields both from the teaching activities he/she is actively involved in and also from the extramural, innovative actions which take place in a university.

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HUMAN RESOURCES MANAGEMENT BETWEEN DILETTANTISM AND PSYCHOLOGY

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ABSTRACT. The human resources management (HRM), as viewed by work and organizational psychology, is a major concern for every organization. HRM needs a scientifical approach and any other approach would be a dilettant one. The dilettantism represents a real threat to the human resources management and its inteferences can be controlled only with experimental data and scientifical methods offered by psychology. In an attempt to present the risks of the amateurism in a field like human resources management, we will analyze a set of articles from "Tribuna Economica", which contain information for those who are interested in this topic.

This article appeals to those who work in the field of human resources management – work psychologists, businessmen or managers – in order to show what applied psychology means in the actual economical context of our country. Our purpose is to protect the psychology as a science and to make the modern businessman more aware of what work psychology means.

A multidisciplinary field like human resources management cannot be approached only after reading a book or taking a short initiating course. Unfortunately, many individuals do that and, therefore, it is not surprising that unskilled persons work as work psychologists. The human resources management is now invaded by so called "specialists" who, without a minimal training in the work and organizational psychology (W/O), make personnel decisions. This can be justified, taking in consideration that various unscientifical practices are massively mediated and that even methodological books, worked up by specialized institutions, mix up the motivation for work with the wages or give marks (from one to ten) for intelligence, memory, work attachment etc. This is absolutely ludicrous.

There are companies that claim to do personnel selection. For being employed a person has to have some specific skills and knowledge for the job, but these companies are not concerned about that. Usually they take the decisions relying only on a so called "selection interview" or two or three psychological tests taken from a review. What we want to stress here is the fact that the process of personnel selection requires a scientifical approach and an error (however insignificant it would be) can have not only material but also psychical negative effects on individuals. Here is an example: a well-known multinational company from our country hired a psychiatrist to do the personnel selection for one of its branches. This situation is a strange one and it shows the irresponsibility not only

of the human resources department of the company but also of the person who accepted to do that service to the company.

The dilettantism and the unscientifical methods are a novelty neither in psychology nor in other sciences, whose boundaries are not sufficiently defined – this was always the battlefield for impostors and dilettantes. Moreover, in our country there is another aspect that stimulates the amateurism: the absence of a law to protect the psychologists.

In order to give an objective image of the risks of dilettantism in a field like that of human resources management – and we refer here only to its psychological side – we considered useful an analysis of 41 articles from "Tribuna Economica". We gathered the articles published between 1994-1998, which deal with the general problem of human resources management and we classified them on themes, such as:

- personnel recruitment and selection
- performance appraisal
- training

PERSONNEL RECRUITMENT AND SELECTION

Seven articles deal with the major topic of human resources management – that of the personnel recruitment and selection. Individuals who didn't decline their profession wrote them, so we don't know if they are psychologists or not. But we do know that they approached with shallowness this aspect, taking in consideration that they mentioned in 57% cases the graphology analysis as a selection technique. They claim that this technique gives information about "the personality traits of the individuals". Moreover, they consider the universally accepted techniques (such as the interview or the abilities tests) only "helps for decision…they have as a result only useless ordinary classifications" ("Tribuna Economica", 40, 1996, p. 31-32). It is wrong asserted that M.M.P.I. or Beck Depression Scale could be suitable for studying the personality of the candidates. The truth is that these instruments highlight the pathological side of the personality and that is why they cannot be used for personnel selection. Other elements that are wrongly mentioned are the tests' taxonomies (e.g. psychometric tests, clinical tests and situational tests) and the role of the psychologist in personnel decision – his contribution is neglected and it is considered that the manager has to take all the decisions by himself. Only one article stresses the necessity of the collaboration between the manager and the psychologist, as regards to the personnel decision.

The person who requires the selection of a potential employee has to know exactly what he needs, which are the specific features of the job, the skills and knowledge required by that job and to ask information about the methodology that is going to be used. It will be a mistake to use a single technique for selection, for example the interview, because although the interview is the most frequent used technique, it is also the most subjective one, especially in the hands of a lay person. The interview gives only biographical data about the individual and, besides, its validity is only .19.

PERFORMANCE APPRAISAL

At present the catchword is "the competence". Every company, political party or any other organization claims that it is competent and qualified. We asked ourselves if this is true. The answer is a pessimistic one, although there are decrees, which require the personnel appraisal. We do want to have qualified individuals to work with, but which are the instruments that can be used to measure the performance.

We found five articles in "Tribuna Economica" which deal with this problem. All of them called on some governmental decisions and decrees and none of them took into account that an appraisal system needs scientifical research. Just the fact that those articles were written by lay persons (e.g. bookkeepers) shows how superficially is treated this problem in our country. The performance appraisal doesn't mean a simple distribution of ratings on an evaluation record, created by what the Anglo-Saxon literature called "an armchair-psychologist". It is the result of a long work with precise instruments and based on statistics, because a wrong-done appraisal can have as a result labor conflicts and major dissatisfactions.

TRAINING

The training is one of the problems of topical interest. It requires psychological knowledge, combined with educational ones. The fact that the economy of our country passes through a transitory period is reflected in those training programs implemented at all its levels. Realizing the importance of training, "Tribuna Economica" is responsive at this problem and, as a result, it publishes seven articles on this topic. Unfortunately, they are as superficial as those concerned with the personnel selection and appraisal. Their authors don't realize that the training is a process that requires time and a diagnosis-analysis, and that it needs a final evaluation in order to see if it achieved its goals. There are many foundations, associations and consulting firms, which offer such training programs. Unfortunately they are finally inefficient because they are concerned more about how important is to do something, about how something has to be done and less about the practical aspect – how to do something.

THE DIAGNOSIS OF HUMAN RESOURCES

There are a lot of methods for the diagnosis of well-structured companies, especially in those cases in that is taken into account the quantitative aspect of the assessment. But the major problem is about the philosophy of the human resources assessment, which is considered essential for the development of a company. As for the organizational psychology and personnel psychology it is quite simple to establish if there is or there is not a proper personnel selection system, if the training is well done, if there were or there were not solved some social problems. Nevertheless, the assessment is improper because:

a) the analysis of the social phenomenon requires a complex methodology for investigating the attitudes, the organizational climate etc.
b) the simple multiplying of the labor conflicts' frequency with a significance coefficient represents a bad solution.

The employee is the key person in this analysis and not a so-called "expert" who cannot represent the perception of the employees and who is out of real context. For example, the employees can judge by themselves if their wages are fairly distributed, if their work is stimulative enough, if the work conditions are proper, if the supervising is adequate etc.
So, at this time, the restructuring of the diagnosis-analysis' methodology, as regards to the investigation of the company's human resources is very necessary. For that, a possible solution could be the intervention of a team, in which the psychologist and the sociologist have a precise role.

The field of work and organizational psychology is larger, containing not only the personnel selection, appraisal and training, but also the development of some programs for preventing work accidents and incidents, ergonomic restructuring of jobs, the development of some strategies of diagnosing and solving the work conflicts etc. And in order to be competent, every manager has to have at least minimal knowledge about work/organizational psychology. And the purpose of this paper was just to make a realistic presentation of what the applied W/O psychology means in the actual economical context.

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STUDENT-CENTERED APPROACH IN PLANT BIOLOGY STUDY

IRINA POP, ADRIANA BARNA

ABSTRACT. The aim of this paper is to present a student-centered approach to "doing science" which focuses on plant biology learning and includes practical examples on how to: use the natural curiosity, concern and creativity of students to turn them into active participants in instruction, instead of passive recipients; introduce students to the scientific method by engaging them in the act of "doing science" with true unknowns, which means planning and conducting minds-on / hands-on activities; teach students from where and how to collect and analyze data in order to find the solutions to questions and problems.

Reform In Science Teaching. Science teaching is changing nowadays and this change is based, for the most part, on a modern conception of how learning occurs in the first place. Students integrate new knowledge with previously held knowledge as they make sense of the world around them and, in so doing, they *construct* knowledge for themselves. In the classroom, *rote memorization of scientific facts has to be replaced by direct experience* with scientific phenomena - hands-on activities - which facilitate the construction of knowledge. In this way, students do science, not just learn about it[1].

So, how does this reform actually play out in the classroom? Some of the major differences in science instruction before and after the current reform are following:

Pre-reform	***Reform - expected emphasis changes***
Emphasis on knowing	Emphasis on doing as well as knowing
Students' primary learning tools are the textbook and the notepad	Students' primary learning tools are lab notebooks and manipulatives
Broad coverage of many topics	In-depth coverage of a few topics
Students work individually	Students may work individually or with partners
Spectator-based format	Activity-based format

[1] Joseph D. Novak, D. Bob Gowin, *Learning how to learn*, Cambridge Univ. Press, 1984, p.12.

Today science instruction is primarily text-driven. Students are presented with the facts and principles of science by reading about them and then (sometimes) participate in labs or watch the teacher doing demonstrations that illustrate those facts and principles.

Now, according to the new curriculum, which is about to be applied to biology classroom too, students have to *learn by doing*[2]: they have to *discover* scientific principles by working with the real stuff - plants, animals - learning to think scientifically as they inquire about the world around them. Often placing students *in groups*, teachers must concentrate on teaching a few topics in depth, rather than more superficially covering many topics.

Unfortunately, most current assessment practices do not reflect this shift from rote learning to construction of knowledge through hands-on activities. In fact, biology teachers - science teachers, in general - all over the country are struggling with the lack of congruence between the new curriculum, the new ways of teaching and the old ways of testing.

Performance assessment is like the other side of the coin to a hands-on science curriculum: the two complement each other. Unlike paper-and-pencil tests, these assessments look and feel like the learning activities pupils do in their daily labs. However, the assessments differ from the labs in that they have been *standardized through rigorous development* to ensure that they are trustworthy measurement tools. They must be able to be scored consistently by different scorers and must truly be testing the concepts and procedures we think they are testing.

We are assessing not only *what* students know (paper-and-pencil tests may be appropriate measures of some of this knowledge), but also if they know *how* to apply that knowledge to solve problems (performance assessments may be appropriate measures of this knowledge in action). The evaluation is based on *how* they went about solving the problem, not just on getting the correct answer.

We need to use performance assessments in our biology (science) classroom according to the way our teaching of science is changing from a textbook-driven approach to a hands-on approach. Performance assessments allowing us to assess whether our students can do science and not just know about it.

Student-Centered Learning. In this method, the student / pupil learns to determine what he needs to know to find success within the class structure. Although the teacher may have considerable responsibility in facilitating investigative and discovery activities, it is expected that the student will take full responsibility for his own learning, with necessary experience and guided practice, until he gains full independence. The emphasis is on active student acquisition of information and skills suitable to ability, level of experience, and educational needs. The student may decide the best individual manner of learning, resources

[2] Constantin Cuco¿, *Pedagogie*, Ed. Polirom, Ia¿i, 1996, p. 30-34.

necessary, and the pace and structure of acquisition within the activity. This is usually done *in collaboration with, and with the facilitation of, the teacher*[3].

In both the student-centered and teacher-centered methods, the teacher may prepare what the student are appropriate learning objectives, learning resources, and evaluation materials, and a choice of pathways that reflects his particular experience and knowledge. In the teacher-centered approach, these materials prescribe what a student is to learn. In the student-centered approach, these materials serve as *guides* and *resources* to be used and adapted as a student feels appropriate for taking responsibility for his own instruction / education. A term paper, with the subject choice coming from the teacher, becomes a teacher-directed pathway. This is the usual combination of strategies.

In fact, the following example illustrates the combination between those two curricular approaches. As teachers create appropriately relevant projects and problems, they provide choices for student exploration and investigation. These experiences put knowledge and skills in a more authentic context because students determine what they need to know and master in the process of finding answers to questions and solutions to problems. Teachers play a *critical facilitating role*, but the main task is to eventually make themselves redundant or dispensable to students' progress.

Advantages

- In this method students do "learn to learn", so that they can meet their personal lifelong need to seek and adapt new knowledge to the challenges and problems they will encounter in the future.
- Curiosity and interest are usually the motivational factors. Because their learning is self-determined and acquired through their own "digging" or study, students become active participants and personally invest in facilitating their own learning.
- As students become active participants in the learning process, student choice facilitates motivation and interest, as students create their own context and relevancy within problems and projects.
- The rewards become internal and less teacher dispensed. Learning, pace, content, style, self-evaluation and resource determination become a collaborative effort between teachers and students. Students acquire the ability to evaluate their own strengths and weaknesses, to determine their own needs, and to learn to meet those needs.
- The student and teacher share the burden to find up-to-date references or learning resources.
- This includes learning how to obtain and use the resources. This model reflects the skills required for success in many career pathways and in graduate-level work (at university, for example).

[3] Charles Temple, Scott Brophy, *Interactive teaching in higher education*, The International Reading Association, Delaware, USA, 1996.

Disadvantages

- Student-centered learning creates many *organizational problems*.
  Extensive learning resources must be available to create the least restrictive learning environment possible. Problems occur because of the nonlinear nature of the curriculum, which must be less structured in order to allow students to spend time using the available resources.
- Assessment / evaluation has to be individualized.
- With a good performance assessment, students are asked to solve significant scientific problems like those they encounter in everyday life. They may be asked to design an experiment, conduct it, and than analyze the results. They may also be asked to apply what they have learned in the lab to solve a new problem. In other words, performance assessments ask students *to be* scientists and *to use* scientific procedures to solve real problems. They ask students *to think*.

Each student must be evaluated within his own context structure. Assessment and evaluation are based around a student's own goals and mutually agreed-upon criteria. This arrangement is an advantage for the student, but may be seen as a disadvantage to the teacher. Of course, each teacher sets certain nonnegotiable goals that any school must require of its students. The student, by accepting a position in this type of learning environment, must expect that there will be a number of competencies to be mastered. Despite this, many teachers see this learning style as a messy model. Some teachers are not comfortable with the role change.

- This approach can create *insecurity* on the part of students, parents, and school. Changing the learner's responsibilities requires foresight and planning.
- In the beginning, students worry about their ability to determine what they need to know and in what depth. Many students have learned to be passive learners and do not engage and adapt easily to this model. Many teachers cannot trust or imagine that students can learn on their own.
- The student-centered approach requires maturity and discipline on the part of the students and different types of educational skills for the teachers, who must be able to facilitate, guide and evaluate students as individual learners who are equally responsible for their own learning. These are qualities that lifelong learners must master and possess. There is no better time to develop them than when their growth can be enhanced and monitored by teachers and parents.
- Any program or curriculum designers who underestimate the insecurity that students and parents feel during a change in teaching and learning strategies may be dooming their program to failure. Changing and anticipating the reaction to change is an important part of implementing any new program.

Planning and conducting minds-on / hands-on activities. Example for plant biology study. Making student-centered biology teaching means that a major part of it must involve *guided discovery minds-on / hands-on experiences* for your students.

For preparing enriching experiences for plant biology classrooms: - decide what you specifically want your students to learn; - select a method by which you will introduce, orient and structure the minds-on / hands-on activity; - decide whether or not you should prepare a data collection sheet for students to use; - work out the details of distribution and collection of science equipment and materials; - if the students work individually or in cooperative learning groups, in the following example, the symbols T, I, G suggest possible grouping arrangements to use at various times during the activity. If more than one symbol appears, choose the arrangement you prefer for your class:

T - teacher directing discussion or demonstration with total class

I - student working individually on task

G - students working in groups of two, three, or four members; - you should perform the lab activity yourself before presenting it to class to see what is involved, to spot any possible difficulties.

The most important element in these discovery activities is that students can discover and construct their own concepts through actual physical and mental participation in activities. Do not tell the students beforehand what they should expect to find. This robs them of the joy of discovery.

Example. Why do some parts of plants grow upward?

What concepts might students discover?

Light and gravity play a role in determining how plants grow.

Roots respond to gravity.

Stems are affected by light.

What will we need?

Shoebox with cover, germinated bean seeds between glass, sunny window or light source, potting soil, ruler

What will we discuss?

What do you think might happen to a plant if its light source is very limited?

What do you think might happen to the stem of a plant if it is inverted (turned upside down)?

What effect does the light have on the way a plant grows?

What might happen to the way a plant grows if it were placed near a window?

What effect does gravity have on the parts of sprouting seeds?

What could you do to find out?

What do you think might happen to the stems if you rotate the seedlings every few days?

What will students do?

OBSERVING
AND
RECORDING

I G 1. Place the germinated bean seeds in taped glass or plastic sheets in bright light, but not in direct sunlight.

2. Keep a one-week record of your observation of how the stems and roots grow as you rotate the glass sheets 90^{o} each day.

What must the teacher know?

The roots will grow down (toward the earth) and the stems will grow up (away from the earth). The plant responses that cause this are called *tropisms. Geotropism* forces roots down as auxins (plant hormones) are concentrated by gravity along the bottom cells of stems and root tips. The bottom cells in the stem are stimulated by the hormones to grow faster than cells higher up; they get longer and curl upward. Roots cells are more sensitive to these hormones than are stem cells, so the root cells inhibit cell growth. Root top cells elongate faster and root tips curve downward.

COMMUNICATING 3.

Graph your findings or present them in another visual way.

INFERRING Hint:

How could you use your ruler in your observation?

INFERRING

What can you conclude from your data?

HYPOTHESIZING

What would you expect other plants and seeds to do under similar conditions?

What results would you expect if you used different or limited light sources? Try this.

4. Plant four germinated bean seeds 2 cm deep in moist soil on a clean plate.

5. Place the plate in a shoebox that has only a single small hole cut in the middle of one end, cover the box, and turn the opening toward bright sunlight or a strong lamp.

OBSERVING 6.

Lift the cover every two days and see how the beans are growing. Add water as needed.

INFERRING

What is happening to the stems and leaves?

Why do think they are growing as they are?

HYPOTHESIZING

What do you think might happen if you turned the plate with the seeds completely around? Try it and observe what happens in two days. Repeat this procedure.

What must teacher know?

Students should see that the beans grow toward the opening in the shoebox, and when turned around they reverse their direction of growth toward the opening again. Green plants need sunlight and are forced toward the light by *phototropism*, which causes the cells on one side of leaves to grow faster than the other. This causes the turning effect of the leaves toward the sunlight.

APPLYING Of what value is this experiment to you?

How will students use or apply what they discover?

What other living things are affected by light and gravity?

What are some other factors that affect the growth of plants?

Design an experiment to test some of these factors.

Knowing what you do about phototropism, why it is necessary to turn your plants at the windowsill every few days? What might happen if you do not turn them?[4]

Conclusion. The teacher-based learning and student-based learning cannot be completely separated. Using both the approaches, in a flexible way, will probably lead to more effective results than their individual usage.

Teacher-based learning refers to students looking to teachers for information that may be important for their success in the class. This usually comes in a lecture format with teacher-directed activities and, generally, uses recall types of evaluation.

Student-based learning refers to more individualized or more self-directed study. There is no doubt that teacher-based learning is an efficient way to cover large amounts of information. Student-based learning can be facilitated best with self-study units of one type or another. It is important to see these approaches as independent of content format. The lecture can be student-based if students have input on subjects they think are important, or students may actually deliver some of the lectures. Self-study can be teacher-based if the teacher structures the units, specifies the readings and other experiences that should be undertaken, and sets the time frame and outcome objectives.

[4] Arthur A. Carin, *Teaching science through discovery*, 7th ed., Macmillan Publishing, USA, A3-A11.

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SOME CHARACTERISTIC PROBLEMS WITH IN LEARNING DISABILITIES

LADISLAU FODOR

ABSTRACT. This study reviews some basic questions of the phenomenon of learning disability. The author presents an analysis of the most important psychological problems concerning children with learning disabilities. He provides an overview on perceptual and motory activity, on language, memory and attention, also on social and emotional problems implicated in learning disabilities.

Most of children, being unable in carrying out in good conditions their activity of learning, confront a certain amount of problems which, in fact, have certain features. Difficulties occur within school tasks and activities, as for instance thinking, speaking, reading, writing, comprehensive attention or mathematical calculation. The specific combination, the variety of types and grades of these difficulties determine the uniqueness of the disabilities in learning which pupils come across. In this paper we will present the most important spheres of the problems characterizing learning disabilities, the essential psychological dimensions of the learning ability.

Problems regarding perceptual activity. The interest of the researchers concerning the perceptive deficit problems linked to the learning disabilities, has lasted for decades (F r o s t i g, 1964; C r u i c k s h a n k, 1967, 1977; K e p h a r t, 1971). After having clarified the concept of perceptual defficiency (as stirring on a basis of insufficiency expressed by the difficulty of interpreting information, despite the intact character of the analysers), the development of the perceptual functions and the fact that these functions are gradually breaking away from motory ones, as an outcome of maturizing and developing after the age of 3 (because during the sensorial-motory stage the sensorial and the motory functions develop tightly interconnected) they got to the conclusion that between 3-6 year sight has a leading role in perceptual activity. The adequate visual perception of configurations, forms and spatiality has a great importance in learning activity. It's known that syncretism prevails in perceptions of forms and configurations (of so-called "gestalts"), during the preschool period. The global visual perception is characteristic at the beginning of preschool period. The child is unable to recognizing well enough the constituent parts of a whole. There's no adequate co-ordination between visual and motory functions, fact prouved eloquently by the difficulties the child has in drawing some geometrical figures, in the sense that despite the correct visual perception, the graphical productions are not the wanted

ones. At the age of 4-5 the perceptions of the forms becames analitical, in the measure in which children recognise some of the structural elements, but withaut their inter-relationships to the whole. At the age of 6-7 adequate perceptual activity, the perception of forms as structured wholes, is to be revealed, and that is the sine qua non condition of assimilation of reading and writing.

Recognizing in a different way the configurations, forms, size and colours, the figure-ground discrimination, the integrated and co-ordinated functioning of the visual and motory functions, represents the base on which the objective constant world of the child will be built, at the same time it represents the useful conditions of the processes of superior knowledge, also of the intelectual functions necessary for efficient school learning.

We also have to refer to some characteristics regarding hearing on the same line of perceptual activities, as it would be auditive discrimination, auditive memory and synthetical auditive reception, qualities required by getting accustomed to reading and writing. It seems that there's no doubt about difficulties and hardships in learning can be put in connection with the stirrings of the perceptual functions just as with the integration and co-ordination of these with the motory functions. Thus shortcomings in visual-motory integration, inadequate functioning of the discrimination in perceptual processes, malfunctions of the organs of sense, the troubles of the visual, auditive and tactile memory, the defficiencies of the haptic perceptions, of the intersensorial integrations, can be generative factors of learning disabilities. In this sense, both preventive and corrective activities most belong to the line of compensation, development and stimulation of these disfunctions and defficiencies of the perceptual sphere.

Problems concerning motory activity. Most of the studies (even the oldest ones) concerning learning disabilities refer also to the malfunctioning of the motory sphere of these children. K e p h a r t (1964; 1971) was one of the first authors who emphasized the importance of the motory system's good functioning in learning activity. He drew the conclusion that the first learnt aspects are the motory ones, thus motory learning precedes all the other forms of learning and that this thing shows a real support for gaining later on the mental skills in learning. He asserted these because he noticed that both from a physiologic and a psychologic point of view the first system, that is to develop, is the motory one. In this way learning disabilities have a necessary connection with the problems concerning motory development.

There's no doubt today, that the defficiencies belonging to the great or small motory deeds, problems of laterallity, directionality, rhythm, static or dynamic stability, the shortcomings within coordination of the motory acts, and within perceptual-motory integration can be a basis for the occurence of learning disabilities. The study of children with learning disabilities revealed the huge motory defficiencies which are included within the causes generating disabilities. In this respect we find a general agreement between the authors (W a l l a c e and M c L o u g h l i n, 1975; N e s b i t, H a d l e y and M a r s h a l l, 1979; L e r n e r, 1989; P o r k o l á b n é, 1994) who recommend, including by all means, as an organic structural element, the training of motory system within the pedagogical programs of preventive and corrective measures.

Problems concerning language. A lot of researchers noticed the difficulties of children with learning disabilities in sphere of language. Problems within language with different grades and forms resides exactly in their stirring effect upon development of skills in listening, speaking, reading and writing. It's known that taking up language skills by children is being accomplished in this hierarchical order and that each new skill is based upon the existence and the adequate level of the preceeding ones (L e r n e r,1976).

The language, as a conplex system of verbal symbols used within human communication, as an essential element of mental processes, constitutes an important psychological means, and many researchers were interested in acquiring it within the early phases of ontogenesis. The theories concerning forming and acquiring language made up by S k i n n e r (1977), C h o m s k y (1965, 1968), L e n n e n b e r g (1967), O s g o o d (1964) or L u r i a (1966) are very well-known. These theories has an great impact on research about language learning and about functional disabilities of language.

Usually, the phenomenon called learning disability was connected not only with the troubles of external and internal language (deeply involved in mental processes and in development of other linguistic areas) but also with the shortcomings of auditive verbal reception. The internal language difficulties affects ability in attaching meanings to some words. Although the subject hears the specific complex of verbal sounds, he is unable to give a certain meaning. Hardships within this linguistic area can be solved with a lot of troubles, because we still have very few scientific concrete information regarding biological, neurological or psychological aspects of this process.

Many of learning disabilities are connected with the insufficient capacity of the pupil to understand verbal language, due to the distorsions from the level of auditive linguistic reception. In these cases chidren don't understand well enough the meaning of the heard words. It's all about difficulties within the sphere of following, placig and understanding sounds of speech from the sphere of verbal attention, phonetic hearing and of understanding grammatical and syntactical structures. In grave cases this troubles adopt the form of verbal deafness or of the verbal auditory agnosy. Children suffering of this type of trouble have difficulties in associating objects with their denomination, in denominating objects, in recalling denominations and in interpreting what they heard.

The disorders may also refer to the spoken (oral, expressive) language. In these cases children hear and understand other's speech but they are unable to use the language under suitable conditions within the activity of communication. In grave cases this difficulty will be called expressive or motorical aphasy or even oral articulatory apraxy. Difficulties with injurious effect upon learning ability can also refer to defficiencies viewing sentences formulation (under the condition in which pronunciation of isolated words is intact), to unability in mental selection of words and last but not least to pronunciation difficulties, respectively to disabilities in articulation of speech sounds.

Problems regarding memory. In the latest 10-15 years the process of learning was studied more and more by the means of theories regarding cognitive processes. According to these theories in the perspective of learning disabilities,

difficulties from the level of cognitive functions present a great importance, from among which theone refering to the memory as well. The fact that many children with learning disabilities has weaknesses in memory, was noticed a long time ago. According to L e r n e r (1989, 181) nowadays revives the interest towards researches about the memory role in learning, towards means of operating of the memory within learning tasks, and towards ways of memory development. This fact determined the increasing of the number of researches upon mnesical processes of children with learning disabilities, that the effort of orientation and systematization is very difficult. The importance of researches within this field is so special, because most of the children with learning disabilities have serious problems with the memory (W o n g, 1996, 86). The researches refer both to processes of memory (imprinting or incoding, keeping or stocking, recalling by recognizing and reproducting) and to types of memory (short or long-term memory, so called active or dynamic memory, implicite memory etc.).

The child with learning disabilities can come accross difficulties both at the level of reception (imprinting) and at the level of keeping and reactualizing (recognizing or reproducting). Clear reception and the exact understanding of those needed to be learnt, have a great influence upon optimal fixing of learning material. The weakness of this ability can be put into connection not only with the defficiencies of perception, but also with disorders of attention or of capacity of phonetically coding. It is obvious for us that in this situation these weaknesses have direct injurious effects upon learning efficiency. Long or short-term maintaining and optimal reactualization of the imprinted material forms absolutely necessary conditions for the adequate school performances. Pupils having difficulties at the level of these memory processes, pupils with defficiency in stocking, storing and promptly refinding of the necessary information, will have great difficulties in making up and using their intellectual or social skills, finaly they will turn out to be unable in solving different school tasks. We also have to remind the fact that memory represents yet a mental ability spittable in a certain measure from the other intellectual manifestations. So it is possible, for example, that the individual with a poor visual memory produce some correct reasoning. There are also cases when weak capacity of understanding or intellectual shortcoming was associated with impressive productivity of the memory. In this respect learning disabilities can be put in relationship not only with the general ability of memorizing but with some partial processes or with different types of memory, as it would be recalling verbal or non-verbal experiences, recalling the words, explanations, directions, memorizing numbers, images, long or short term memory, mechanical or sequential memory. There are also few cases in which problems of stocking can be linked to insufficiency or lack of some basic knowledge in which the new material can be integrated. Many times children with learning disabilities have not a general memory problems, but they have got an inability in using useful ways or strategies of memorizing, planning activities or organizing the stored material. This fact draws our attention upon the need of including in the programs of learning improvement some activities for stimulation and development of memorizing strategies. Though biological - physiological improvement seems to us impossible

to turn up, development of processes and abilities linked to memory by the means of adequate interventions measuresw was proved not once.

Great researches (T o r g e s e n, 1988; S w a n s o n, 1993) proved that pupils with learning disabilities face serious problems in short term memory of verbal information, what negatively influences efficiency of decodification and implicitely of reading learning. These children have generalised problems within dynamics of active (functional) memory just as much as they have the weak performances within tasks implying processing, understanding and simultaneous stocking of information (aspect tightly linked to the lexical act).

Problems concerning attention. It seems obvious to us the fact that difficulties concerning the process of attention, such as: reduced stability, great distraction, disability in intense concentration on some objectives, accentuated fatigue, insufficiency of the selective function, reduced mobility, unadequate volume etc., negatively affect the obtaining of optimal school performances. Both hyperactivity, as motory symptom, and deficiencies of attention have been frequently taken into account by authors, regarding the learning disabilities. In case of attention disfunctions the accentuated distractibility has been one of the most mentioned characteristics. Subsequent researches have proved that the prevalence of attention troubles in learning disabilities is of 15-20%, this meaning that we are talking about two different phenomena. While disabilities in learning are prevailing neurological troubles which affect the psychological processes involved in learning, attention troubles determine disfunctions which have no considerable impact on psychic processes involved in learning. We mustn't forget either the fact that some attention qualities, esspecially its volume, are correlated both with perception and intelligence (H e b b, 1994, 92), which makes extremly difficult the dissociation of these three psychological functions in school performances. Attention troubles, which provoke mostly the inattentive state, also associate with impulsivity and hyperactivity, causing a specific well known syndrome: the hyperactive trouble with attention disorder. Some children may have learning disabilities with or without this syndrome. Other children may develop this syndrome without becoming disable in learning. The most recent studies (W o n g, 1996) have discovered that about 40% from the children with learning disabilitiy have also attention troubles. The causes of this relatively accentuated co-morbidity are mostly searched for in the genetic factors.

Because of the problems concerning attention children often don't understand or hardly understand the teacher's enunciations, instructions or explanations, show marked inertia (inflexibility) when they are confronted with activity changing. Also they aren't capable of finishing their tasks, they are very easily attracted by unimportant or irrelevant stimuli of the environment. They find it very difficult to concentrate on special school activities for a certain period of time, which undermines their results in learning. Neither are seldom the phenomena of daydreaming or mental block when faced with certain tasks. An important characteristic of children with learning disabilities observed by B r y a n t (1972) refers to the fact that attention problems or insufficiencies become concrete not only in school activities, but also in out-of-school tasks or activities, such as games or T.V. watching. Thus, attention, as one of the most important psychological

conditions of learning must always be taken into account in the teacher's forming interest. Experience shows that within certain limits, the activity of concentrating psychic activity in a special direction can become optimal by stimulatory and compensatory pedagogical methods and techniques. Thus, both preventive and corrective programs - applicable to children who present the risk of contacting learning disabilities or in the case of those who already confront themselves with multiple difficulties in learning - will necessarily include therapeutic-stimulating measures precisely addressed to aspects of voluntary attention.

Social and emotional problems. It seems that learning disabilities have a very large sphere as they denote not only specific difficulties in intellectual activities, but, most times, they involve also some disfunctions in social habits such as: social ability, emotional processes, motivation and behavior. Some authors consider that special social-emotional problems can determine difficulties in learning, while others believe that social and emotional problems are the result of learning troubles. Anyway it seems that this problem is very difficult and it hasn't got till now any solution accepted by most of the aothors. Though, we must notice that pupils who are confronted with learning difficulties on a long period of time, earlier or later, will be confronted also with social and emotional problems. According to us, the problem concerning the relationship between learning disabilities and social-emotional aspects can be put on a bidimensional plan, i.e.:

a) Which are the typical social and emotional problems which can be generated by the state of learning disability and how can they be prevented or neutralized?
b) Which are the social and emotional necessities of children who confront themselves with learning disabilities and how can school satisfy these necessities?

Anyway, among the social and emotional problems (most of them being of minor importance as they are met only with some of the disabled childfren) with which the disabled pupil confronts the researcher (W a l l a c e and M c L o u g h l i n, 1975; L e r n e r, 1989; A r i e l, 1992; W o n g, 1996) refer mostly to the following:

a) accentuated dependence towards parents, teachers and other adults, which implies assistance, help and excessive strength from them;
b) inadequate self-image (generally of an inferior level comparing to the children with good school efficiency), negative self-evaluation, sense of unability and helplessness, distrust in their own power, fear of failure, hesitating behaviour etc. Nevertheless, there must be noticed that all these occur only in the case of intellectual activities, because in other fields (sport for example) these children have a positive self-image and self evaluation;
c) disordered, destructive and aggressive (antisocial) behaviour;
d) hyperactivity or on the contrary, apathy;

e) irritation, insecurity;

f) shortcoming of the motivational system;

g) unability in perceiving other's feelings (lack of empathy);

h) low tolerance to frustrations;

i) weak curiosity, low interest level for knowledge;

j) difficulties of verbal perceptions; troubles of verbal expression in social situations;

k) socializing problems (social immaturity, hostility, disability in integrating in social situations etc.);

l) anxiety, timidity, inhibition;

m) persevering behaviour (repetition of acts or operations, incapability of leaving one activity and moving to another);

n) difficulties in interpersonal relationships because of sentiments of incompetence and inferiority and because of inacceptance from their colleagues.

There are sufficient empirical data to certify the fact that a great number of pupils with learning disability are unpopular and even rejected by their colleagues. Serious studies in this field refering to areas such as: social perception, social problem solving, understanding of non-verbal instructions, self-expressing and language expressiveness, understanding social rules etc., have been made by B r y a n t (1991).

To conclude, we may assert that social and emotional problems of children with learning disability must taken into account because through psychological and pedagogical treatment we can influence the process of learning. As teachers, in the case of children with learning difficulties, we must always ask ourselves: What does the pupil feel? Have his emotional necessities been satisfied? Which is the present emotional status of the child? The strategies of elaborating and developing social habits and skills, proper social status, motives for performance, self-trust, every social valid conduct etc. must be part of the programs of preventive or corrective intervention, because social and emotional problems can affect noxiously both the ability of learning, respectively the intellectual performances, and the general school adaptation. The formation and strengthening of social competence in the case of children with learning disability materialize in stimulating a multitude of habits and skills. S h e l d o n, S h e r m a n, S c h u m a k e r and H a z e l (1983) have identified 30 habits with major importance for building of the social competence, such as: help giving, thanks acceptance, instruction following, asking questions, participating in discussions etc.

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MODERN APPROACHES OF DIDACTIC EVALUATION

CRISTIAN STAN, CORNELIA STAN

ABSTRACT. The increased emphasize on the issues of didactic evaluation is part of the global re-structuring of the educational process, aimed to improve the quality of education. It is more and more clear that if we want to promote an efficient education we should provide more than the development of the models of instruction. We should also act in the favor of imposing new forms and methods of evaluation and assessment, according to the needs of contemporary education.

Aware of the fact that inside the traditional system of evaluation, that was rigid and often ineffective, the pupils acquired certain knowledge and skills only because they knew that these knowledge would be tested, and not because they represented intrinsic values as educational goals, the specialists confronted the need to offer efficient and valid alternatives.

In what follows we will discuss the main courses of action that define and characterize the present efforts of the scholars in the field of education, to make more effective and to improve the didactic evaluation. We aim to offer a general perspective over the process of modernization of the education.

(1) Provide the context and authenticity of the school tasks

The thorough analysis of the educational process and of its main objectives shows that there is required a permanent and multiple framing of pupils' performance. There were two wrong premises that stood at the basis of the design of traditional tests: knowledge can be divided into simple, basic elements, thus ignoring the functional interdependence that constitutes the informational substance of the respective knowledge; the information can be taken out of its context, that is, if one person possess certain knowledge in a certain context, it is legitimate to infer this fact to all contexts where that information might appear (Fitzpatrick, S.R., 1994). Based on these considerations, all tests of knowledge so far involved a simplistic approach of evaluation, more or less obviously supported by a stimulus-effect understanding of learning process.

The fact that the performance of the pupil is achieved in an artificial context, with no correspondent in the real world, induces important bias in what concerns the relevance and validity of didactic evaluation. It is required that there should be evaluated the pupil's ability to take correct decisions in different situations, and not his ability to invariably respond to some well-defined stimuli.

Until now, the tests of knowledge were purposely simplified and de-contextualized. There was ignored the fact that the sum of different exercises/tests could not be equivalent to the fluidity of an actual performance. The tests were mainly tests of exercise and not tests of competence. The competence is based on context and reason. The intellectual competence involves more than correct answers to clear and precise questions. It can not be conceived as simple logic operation with informational elements, but it involves the use and creative adaptation of information taken from various contexts (Ravitch, D., 1993).

The didactic evaluation based on simple pieces of information and de-contextualized knowledge can not tell how would a pupil perform in highly de-contextualized situations, that are rare in the "real life". The aim of education is to form individuals with high intellectual competence, and not passive selectors of prefabricated answers.

Taking into account all these, it is obvious that the evaluation should consider a more personalized intellectual performance. There should be designed strategies that take into account this fact. One of the criteria that can define a good tests is the consistency with the reality. The techniques of evaluation should be able to capture the capacity of the pupil to adapt his knowledge to various situations. This can only be tested through tasks/tests that need for the pupil to use his knowledge in relation with the whole set of factors/variables that characterizes a certain context. The mere acquisition of information could never develop the faculty of reason of the individual, since it does not require the actual and effective adaptation to situation and role.

There should also be re-considered the authenticity of the evaluation tests. An authentic test requires:

* The tasks of the tests should be as much as possible consistent with real tasks. There should be at least a similarity between the items of the test and the competence/performance required for a "real world" situation.

** The representation of the context/task should be appropriate. The evaluation should be insured a fidelity of context.

(2) Provide an optimal relation between the empirical and scientific dimensions

The concrete means to evaluate the performance, respectively the competence, of the pupils in school may generally be classified as follows: standardized (elaborated at central level by groups of specialists, following a set of norms and rules in order to insure the validity and fidelity of the tests of knowledge) and un-standardized (elaborated by the teachers themselves, based on their experience and on the necessities of the class).

a) The standardized methods of evaluation, which can be one choice tests (fill in tests or short questions asking for a definition) or multiple choice tests, provide the uniformity of the experimental conditions and have the advantage to be easily applied and interpreted. They are accessible for all disciplines or objectives,

they permit rigorous comparisons between samples, offering statistical validity, internal consistency, and a high fidelity of the examinations.

Nevertheless, there are several difficulties: the rigidity of the instructions of administration, the limited capacity to adapt this kind of tests to the concrete, particular, situations (Davies, I.K., 1971). Also, if we take into account the requirement of consistency between the school performance and the "real life", this type of tests have the major disadvantage of the de-contextualization of the tasks. The conditions of standardized evaluation require well-defined and precise stimuli to which the pupil should react, but this kind of situation is very rare in the real life of an individual.

b) The un-standardized methods of evaluation are mainly empirical, they are not administered in homogenous conditions and the results to these tests depend in a great degree on the fluctuating experimental conditions. They complement the standardized tests and bring useful information. They make possible the examination of some aspects that could not be measured by standardized tests. Their main advantage is the fact that they allow the observation and record of the conditions and contextual variables of the materialization of the competence and performance of the pupils.

The evaluative activity tends to move from the scientific dimension to the experimental dimension. The relative recent educational paradigm of the standardized education, introduced in the idea that the use of a statistic-mathematical apparatus would better legitimate the scientific status of the social-human disciplines, is no longer the only accepted paradigm. There is acknowledged the importance of un-standardized methods and means of evaluation - another fundamental orientation in the re-structuration of the strategies of modern didactic evaluation. There are more and more frequent developed ***intermediate tests***.

The intermediate tests are characterized by the fact that they synthetically link elements of standardized tests (statistical validity and fidelity, homogeneity of examination etc.) and of un-standardized tests (the possibility to adapt to different situations, use of context). These tests offer the possibility to examine the real competence and performance of the pupils, permitting a more precise evaluation of the educational process as a whole and its optimization.

(3) Elaboration of national standards of evaluation

The didactic evaluation involves a normative perspective, objectified in criteria and standards of evaluation of the activity of the pupils. In other words, the didactic evaluation requires an interpretative scheme, conferring sense and significance to the data and information. This is obtained by relation to some criteria. The global re-structuration of the techniques and strategies of didactic evaluation include the generalized use of national standards of evaluation.

The main reasons for this decision are: a) the necessity to make the educational process effective at a national level and b) to offer a homogenous and unitary character to the educational reform.

a) The national standards of evaluation express in a concise and clear form the level of required cognitive and behavioral abilities of the pupils in order to fulfill definite educational goals and objectives. As they constitute the result of a set of expectancies, they are based on a set of educational objectives linked with the general trend of educational process in the respective country and with a methodology of teaching that is relatively homogenous and settled. It is obvious that these objectives have to be clearly defined in order to constitute criteria of evaluation for pupils performance, and the efforts of the specialists should go into this direction.

The use of national standards requires the elaboration of a global policy of evaluation. This means that there should be set a commission of experts who, in cooperation with practicing teachers, should thoroughly analyze the curriculum and the its concrete objectives. The main tasks of this commission should be: to elaborate directions and detailed instructions for the national standards of evaluation and the actual function of the standards and, in the same time, to insure the distribution of the results in the territory.

The national standards of evaluation have to be designed so that they are highly flexible. They should be able to be transferred and used in analyses at the micro-level of the class or school, as well as at the level of the whole educational system.

The national standards of evaluation makes possible to establish an individual status for every pupil. There is a general tendency to convert the traditional marks/scores into hierarchical levels of performance, according to the degree of fulfillment of the objectives required by the standards. We have to note here the fact that the normative evaluation will not substitute and will not eliminate the evaluation based on inter-individual comparisons. The aims of national standards evaluation demands a correlation between the normative and the formative evaluations. The specific difference from the traditional strategies of evaluation is the fact that the use if inter-individual comparisons will be made among pupils at the same level, and the results will serve as reference for the optimization following the teaching. Thus, the teaching will be differentiated according to the level obtained by the pupils, which culd lead to an increased efficiency of the educational process.

b) The national standards of evaluation, by their nature and administration, offer an important suuport for the educational reform. They represent a dynamic factor not only for the didactic evaluation, but for the whole institutional practice. They may contribute to a coherent and unitary management of the educational reform, serving as both point of start and goal of the reform.

Any reform should start with a consensus over what pupils should learn and, on this basis, over all the components of the instructive-educational process. In this respect, the elaboration of national standards of evaluation represent a valuable exercise for achieving such a consensus.

As a conclusion, we will make the following commentaries:

* The set of national standards of evaluation does not mean at all the centralization of the educational process, since they are elaborated by groups of specialists in cooperation with the teachers in the country, and their use is characterized by flexibility.

** The national standards of evaluation will be dynamic, established for a use at national level, but not controlled by the central authority.

*** The national standards of evaluation are not conceived in order to outline an elite, they address to all children.

**** The national standards of evaluation allow a more clear definition of the tasks, both for the pupils and for the teachers, thus better emphasizing the knowledge and abilities that are to be achieved.

(4) Provide an interactive character for the didactic evaluation

It is only obvious that the educational process has a real and complex dynamics, amd this should be taken into account when there is designed any evaluative strategy. In this respect, there should take place an effective interaction between the evaluation and the different moments/stages of the instructional activity.

At present, there is a lack of substantial interaction between the evaluation and the rest of the sub-sequences of the didactic activity, between the evaluator and the evaluated. The analysis of the majority of the strategies of evaluation, at present, shows that during the evaluative processes there are few effective interaction and cooperation moments, between the teacher and the pupils, and they are very often restricted to a simple ask of questions (Worthen, R.B., 1993).

The new tests of knowledge will try to stress the function of feed-back of the evaluation, together with an increase of participation both for the teachers and fort he pupils at the evaluative act. It would thus be emphasized the development of the capacity to induce an open environment in the classroom, for the teachers, to favor appropriate interventions of the pupils during the evaluative activity, and to get the instructive process closer to the "adult work", where is needed the cooperation and the team-work for decision-making and problem-solving.

(5) Development of new strategies for collecting and interpreting the information required by didactic evaluation

The traditional techniques of evaluation of the pupils performance are deficient not only because they are static, rigid and incapable to accurately outline the intellectual and behavioral evolution of the pupils, but also because they limit the range of progress indicators. We think here to the many situations when the marks of the pupils were mainly given for their capacity to memorize and/or

mechanical, reflex adaptation to often rehearsed tasks, and when there are eliminated a series of really relevant information concerning the progress of the pupils.

Having this in mind, there should be increased the range of investigative techniques and of the interpretative modalities of the evaluative activity of the teacher. The alternative evaluation constitute the result of rigorous and efficient combination of different strategies of collecting and interpreting the information regarding the school progress of the children. In what follows we will describe the main features of the alternative evaluation and we will expose the main orientations of this type of evaluation.

First of all, there are more objectives set for the evaluative activity. Together with the evaluation of the intellectual and behavioral competence/performances of the pupils there are also evaluated correlative aspects like: efficiency of processes and mechanisms of learning, the capacity of the pupils to work in teams, his ability to adapt to various situations, the pupil's capacity of self-evaluation. They permit a better and more accurate outline of the school progress. We can also notice an increase of the fidelity and efficiency of the evaluation, which could in turn improve the whole education process.

The modernization of the strategies of didactic evaluation also include significant changes in what concerns the space of testable performance and competence of the pupils. The activities fulfilled by the pupils that can make the object of the evaluation are enlarged; when giving the marks, there is reconsidered the importance of the different tasks. Beside the results in traditional tests, there are also taken into account the "effective performance" of the pupils, such as: the skills of oral exposition, the creativity and the originality in the elaboration of written papers and the capacity to do valid informational inferences based on already acquired knowledge and to apply them.

An important role for the increase of the objectivity and efficiency of the evaluation plays the use of evaluation portfolios.

The evaluation portfolio represents a set of complex tasks, based on a certain theme/discipline, that are submitted to the pupils at the beginning of the school -year or for a certain period of time. The pupils have to solve all the set of tasks at the end of the respective period. The portfolio is conceived as independent work, and is designed according to the level of knowledge and skills of every pupil.

In what concern the investigation techniques for evaluation, we notice a revival of the oral examination. This is explained both by the complexity of the competence and abilities required by this type of evaluation, and by the possibility of increased interaction between the pupils and the teacher (Torrance, H., 1992).

The modernization of the integrated techniques of evaluation also means, besides the increased use of oral examination, the larger use of observation. Observation aims to a permanent monitoring of the progress of the pupils, in order to obtain a framework for a more objective evaluation.

To avoid any interpretative bias there is required the set up and permanent actualization of an inventory of intellectual and behavioral abilities of the pupils. The observation and the use of the inventory will make possible the improvement

of the teaching and will permit a better structuring of the information regarding the individual and/or group characteristics of the pupils.

The alternative strategies of evaluation also include the use of tests of competence. The main function of the tests of competence is to relate the pupils to a future, hypothetical curriculum, in order to investigate his capacity to successfully fulfill its requirements. There are tests of minimal competence, designed to help to estimate and establish with sufficient accuracy the chances of success, and to adjust, when necessary, the curriculum requirements (Hammond, L.D., 1994).

In what concerns the interpretation of the pupils' results, stage that is very important in the economy of any evaluative strategy, we may notice at least two significant directions of change. First of them concerns the better correlation between the current internal appraisal (tests elaborated, administered, graded by the educational institution) and the external, periodical appraisal, component (tests elaborated, administered, graded in cooperation with specialists and experts). The two categories of appraisal may increase the quality of the evaluation, on one hand by insuring a correct interpretation of the performances, on the other hand by relating the local performances of the pupils to national standards.

The second direction of re-structure of the interpretative stage, as a component of the process of results evaluation, is the meta-evaluation. The didactic meta-evaluation refers to the combination of the different sources and levels of evaluation, during all didactic activities, in a unitary and consistent manner, at global level. The meta-evaluation capitalize the results of groups of local evaluators, results that include information, documents, statistical data and opinions concerning the phenomenon of evaluation, in order to produce case-studies and, based on these, new methodologies for the appraisal of the pupils' school performance. Meta-evaluation represents a dynamic factor and an essential condition of the reform of the strategies of evaluation.

(6) Provide the formative character of the didactic evaluation/self-evaluation

The modernization of the education requires that the didactic evaluation should not be reduced to its estimation dimension. The strategies of didactic evaluation have to be conceived, designed and used so that they could develop high intellectual and behavioral competence for the pupils.

This requires, in the first place, that the evaluation tests include tasks that require more than the simple mechanical reproduction of information. The tests should be used in such a manner that pupils discover, based on information and inference rules already acquired, new knowledge and skills. On other words, classic sequences of teaching should be adapted and changed into heuristic approaches, of evaluative character. The results of the administration of such tests, and of the work strategies adopted by the pupils to solve their tasks, will be used as reference points for the rest of the instructive-educational process. This way there can be avoided a certain routine of the verification and control stages in the structure of the lessons, so that evaluation will be dynamic, flexible and useful in the same time.

Thus, the didactic evaluation may represent more than a simple report, it can be a necessary and useful stage in the educational process. If we reduce the evaluation to some scores and marks, we miss its motivational function. In a context generated by the evaluative situation, the pupil is better motivated and more attentive than normally. It is the teacher's job to take advantage of this context and to ask supplementary questions, to involve the pupil in ad-hoc, "on-going clarification" of certain notions, concepts or processes, even to improve the mark of the pupil.

The didactic evaluation as a teaching method has certain important advantages. It is enough to mention that in this way it is eliminated the definitive character of the mark, the stress is decreased, and it is avoided the "learning for a certain event" which means to forget, afterwards, all that was learnt; it also stimulates the wish to learn and self-perfection of the pupils.

(7) The development of the capacity of self-evaluation of the pupils

This direction of modernization concerns the design of didactic evaluation strategies that are able, by their specific way of construction and employ, to emphasize and better use the retroactive function of the appraisal of the results, through the development of the self-evaluation capacity of all of the actors in the educational system.

This requires a thorough analysis of the relation between evaluation and self-evaluation in the didactic activity. The inter-dependency between evaluation and self-evaluation, and the direct or mediated effect of this relation over the various instructional plans, require a constant effort of improvement of the self-evaluation component (Shilpi, N.N., 1995).

The teacher evaluated the performance of the pupil using several criteria (information, accuracy, level of understanding, capacity of superior transfer, creativity, originality etc.): the mark represents a synthetic result of all these aspects. It is hard for the pupil to decode the mark or the verbal appraisal of the teacher and to transpose it into differentiated elements regarding his situation. The teacher should keep perfect transparency in what concerns the criteria of the evaluation, as well as the stages required to solve a task (Broodfoot, P., 1992). The pupils is thus able to better understand the asks he has to perform and to validate in a rational manner his estimation of his level of preparation.

The pupil has to develop some abilities of self-evaluation. Consequently, the pupils should be attracted into active involvement in the process of evaluation; the marks should insure an effective interference with their subjective interior. The evaluation context should be designed in such a way that may permit, on one hand, for the pupils to understand their own performance, an, on the other hand, to encourage him to develop an individual system of norms and criteria of appraisal in concordance with the one proposed by the school. The pupils may also help to change the strategies of evaluation in a beneficial way, in the sense of increasing the objectivity of grading and of a better fit of the appraisal to the individual particularities of the pupils.

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THE METHODOLOGY OF TEACHING CHEMISTRY IN THE UNIVERSITY

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ABSTRACT. In this paper the author tray to offer some solutions the accomplishement of both the informative and formative side of education in chemistry. This solutions would be the following: the debate connses, the active-participative methods (problematizations, exercises, brainstorming) and the students' prereprezentations.

In the teaching of sciences, chemistry occupies a special place, both for its formative and for its informative role in the training of the will be specialists. We have to admit that science is a component of modern culture, as in a modern society, education could be considered a continuous "training" for the entire life of the subject.

It is essential that education should be realised so that it would contribute to the development of the individual personality. Hereby resulting the importance of didactic methodology at the level of any discipline and the necessity to improve the teaching process at this stage.

In the context of modern methodology, the instructional activity will be based on the prerepresentations of the subjects and not on the capacity of memorising and reproducing of a material during a more or less formal examination.

At the Faculty of Chemistry and Chemical Engineering "Babes-Bolyai" University, the teaching process is of a great importance. Whatever the content to be taught (organic, inorganic, physical chemistry, biochemistry, etc.), it would be very important the ***manner*** in which this knowledge is transmitted.

The first step consists of the rational structuring of the content of chemistry, so that this structuring would be based on the knowledge gained by students during their preuniversitary studies (gymnasium and high school), but also on their prerepresentations, highly important, remembering that our subject is ***not*** an empty "box" to be filled with more and more knowledge (information) by a teacher.

Unfortunately, today, due to "inertia" and to the huge number of students attending a course (100-130 students), the applied methodology is one of the lectures, type courses (100 minutes), where the teacher "displays" his or her (own) knowledge in the field, in a more or less systematised manner.

These courses kept during a semester or a whole academic year are verified through examinations, mainly written, evaluation that presents many disadvantages: "mechanical" reproduction (learning by heart) of a phenomen or process, the possibility of "inspiring" from different sources, etc. So using the traditional methodology we shall not provide for the formative side of education, and at the end of the faculty, we shall have "robot" graduates who haven't developed their personality except, maybe, during laboratory classes or during seminars, or along their teaching practice, which covers one, maximum two semesters (at two specialisations).

I consider that the only way to assure the both the informative and the formative side of education is the "Debate-courses" which could appeal to the students' prerepresentations, to their general culture, to their logic, and which contribute to the development of their personality.

Debate-courses, based or not on a selective bibliography that the student is obliged to read before attending the course, will join a series of active-participative methods, like for example: problematizations, exercises, analogy, brainstorming, etc. The teacher will listen to all the students' prerepresentations concerning to the notion to be taught, and then, using appropriate methods (demonstration, explanation, etc.) will confirm or will infirm these prerepresentations, more or less correct.

A concrete example, in a course on general chemistry on the theme "The concentration of hydrogen ions" would be: we will give as an independent activity, during the course, an exercise, like this:

Test I: Calculating the pH of a solution of a strong base.

Calculate the pH of a 0.010 M $Sr(OH)_2$ (aq) solution at 25°C

STRATEGY. First, we confirm that the base is strong. For a strong base the value [OH] is equal to the molar concentration of the base in solution, multiplied by the number of OH^- ions per formula unit. Then we calculate $[OH^-]$, and from that value, we calculate pOH by taking the negative logarithm. Once pOH is known, we calculate the pH from:

$$pH + pOH = 14.00$$

SOLUTION. The chemistry confirm that $Sr(OH)_2$ is a strong base in water. Each $Sr(OH)_2$ formula unit produces two OH^- ions, so $[OH^-] = 2 \times 0.020$ mol/L = 0.020 mol/L.

Hence we can conclude that $pOH = -\log(0.020) = 1.70$ and $pH = 12.30$

After the students having written this simple reasoning by themselves, the teacher will use methods like explanation, heuristic conversation to teach for example "strong acid - strong base mixtures". To follow the feed-back, the student will be given a new set of written tests.

Test II: Calculating the pH of a strong acid - strong base mixture

Calculate the pH of a solution that results from the addition of 15.0 mL of a 0.340 M NaOH (aq) to 25.0 mL of 0.250 M HCl (aq)
STRATEGY. The reaction is between a strong base, NaOH and a strong acid HCl, both of each are fully ionised in solution, producing Na^+, OH^-, H_3O^+ an Cl^- ions. The hydronium ions provided by the acid react with the hydroxide ions provided by the base, so:

$$H_3O^+ (aq) + OH^- (aq) \rightarrow 2H_2O (l)$$

This equation implies that 1 mol H_3O^+ reacts with 1 mol OH^-. Hence we need to determine the amounts of H_3O^+ and OH^- ions supplied by each solutions, decide which is the limiting reagent and calculate the amount of the ion in excess that remains after the reaction.

Then we divide that amount by the total volume of the solution and convert the resulting molar concentration to pH.

SOLUTION. The amount of ions supplied by each solution are:

$$\text{Amount of } H_3O^+ = 0.0250 \text{ L} \times \frac{0{,}250 \text{ mol } H_3O^+}{1 \text{L}} = 6.25 \times 10^{-3} \text{ mol } H_3O^+$$

$$\text{Amount of } OH^- = 0.0150 \text{ L} \times \frac{0{,}40 \text{ mol } OH^-}{1 \text{L}} = 5.10 \times 10^{-3} \text{ mol } OH^-$$

So the H_3O^+ ions are in excess, and after the reaction of all the OHŞ ions, the amount of H_3O^+ remaining is:

$$6.25 \times 10^{-3} - 5.10 \times 10^{-3} = 1.15 \times 10^{-3} \text{ mol } H_3O^+$$

Because the total volume of the solution is 40.0 mL or 0.0400 L, the molar concentration of H_3O^+ after the reaction is:

$$[H_3O^+] = \frac{1{,}15 \times 10^{-3} \text{ mol } H_3O^+}{0{,}0400 \text{ L}} = 2.88 \times 10^{-2} \frac{\text{mol}}{\text{L}}$$

thence:

$$pH = -\log (2.88 \times 10^{-2}) = 1.541 \cong 1.5$$

(the interaction between ions affect the result)

In order to confirm or to infirm the results obtained by the students at the test I as well as at the test II, the teacher will centre on the following exercises (using ANALOGY).

Test 1: Calculate the pH of a 1.5 x 10^{-3} M $Ca(OH)_2$ aqueous solution.
Test 2: What is the pH of a solution that results from the addition of 20.0 mL of 0.340 M NaOH (aq) to 25.0 mL of 0.250 M HCl (aq)

"Qualitative" evaluation during a course in chemistry is even more important than the "quantitative" one expressed by marks. Giving marks is a more or less subjective kind of evaluation, but it doesn't contribute to the development of the students' personality. So, the student ***has*** to be an active factor, to build new knowledge, helped by the teacher, because only in this way we shall develop the flexibility of thinking at the youth, and let's not forget that the youth of today is the society of tomorrow, that they will have to be able to take decisions, both in the economic and social field.

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L'INTERFACE MÉTHODOLOGIE DE L'ENSEIGNEMENT / APPRENTISSAGE DE LA CHIMIE - PRATIQUE PÉDAGOGIQUE ENTRE NÉCESSITÉ ET RÉALITÉ

MUŞATA BOCOŞ

ABSTRACT. This paper is based on the premise that the pedagogical practice at chemistry requires the achievement of an interface between the theory and the practice of the instruction at this discipline. The facets of this interface respectively the conclusions of this article were classified in three categories: the instructional design, the practical accomplishement of didactic activities and finally the behavior of the future teacher.

La constitution des méthodologies d'enseignement/apprentissage des différentes matières en tant que disciplines scientifiques, est devenue possible grâce aux efforts théoriques et pratiques des spécialistes du domaine des sciences de l'éducation et aux efforts des praticiens pour la transformation de la didactique générale, d'"art" ou simple "technique" d'enseignement, en une véritable science de l'enseignement et de l'apprentissage, de l'instruction et de l'éducation. Les méthodologies d'enseignement étudient et dirigent la théorie et la pratique de l'enseignement et de l'apprentissage des disciplines, relevant les aspects spécifiques qui résultent de la mise en pratique de la théorie générale du processus d'enseignement. Ces méthodologies ne représentent pas une sinple transposition des recommandations de la didactique générale, mais une mise en application créatrice, une adaptation de celles-ci au spécifique de la matière d'enseignement, ayant non seulement un caractère descriptif et normatif, mais surtout un caractère pratique, explicatif et prescriptif.

D'autre part, entre les méthodologies d'enseignement/les théories de l'instruction et la pratique de l'instruction afférente à chaque discipline, se réalisent des interfaces, c'est-à-dire des équilibres dynamiques entre les acquisitions théoriques des étudiants et les stratégies didactiques imaginées et réalisées pratiquement, tout cela ayant pour but de rendre plus efficaces les processus d'enseignement-apprentissage des disciplines en question.

Dans le cas particulier de la chimie, d'une part, la méthodologie de l'enseignement de la chimie, en tant que branche subordonnée à la didactique générale, dirige la pratique de l'enseignement-apprentissage de cette discipline. D'autre part, la pratique instructive dans ce domaine, par ses résultats et conclusions validés expérimentalement, peut contribuer à l'extension de la sphère d'action de la didactique de cette discipline.

La pratique pédagogique effectuée par les étudiants en chimie représente une composante du sous-système de la préparation initiale des enseignants, dont la tâche est de réaliser autant de liens que possible, entre les connaissances théoriques acquises aux disciplines psychopédagogiques et pendant la pratique instructive dans la chimie. Loin d'être une "simple" continuation de la préparation théorique acquise aux cours et aux séminaires, la pratique pédagogique présente des objectifs éducationnels bien établis, ainsi que des caractéristiques qui en relève l'importance majeure dans la préparation des futurs enseignants et qui dérivent du déplacement de l'accent des démarches purement théoriques sur celles du type pratique-action.

Il nous semble extrêmement important le fait qu'il faut aider les étudiants à comprendre que la pratique pédagogique représente la meilleure occasion de prendre conscience de l'utilité du cours de didactique et le fait qu'on ne doit pas apprendre ce cours pour la seule raison de passer un examen théorique, mais avec la certitude que le cours est indispensable à l'exercice de la future profession didactique. Les étudiants doivent s'habituer, à la fois, à appliquer d'une manière créatrice les indications théoriques de la méthodologie de l'enseignement de la chimie, parfois même à critiquer certains aspects développés par les spécialistes de ce domaine.

Dans ce qui suit, nous allons analyser les facettes de l'interface <<didactique de la chimie - pratique pédagogique des étudiants>>, en formulant une série de conclusions basées sur les observations effectuées au cours de la pratique instructive à cette discipline et basées aussi sur l'interprétation des données d'enquêtes réalisées parmi les étudiants pratiquants et les professeurs dirigeants de la pratique pédagogique.

Les aspects de l'interface <<didactique de la chimie - pratique pédagogique>>, l'ensemble de conclusions que nous en avons tirées, peuvent être circonscrits aux trois directions suivantes d'analyse:

- la préparation et l'élaboration des projets didactiques des activités instructives-éducatives;
- la réalisation pratique des activités didactiques;
- le comportement (la conduite) du futur enseignant.

En ce qui concerne la préparation des activités didactiques, étape qui finit par l'élaboration des projets didactiques, elle est assez souvent considérée plutôt comme une obligation et comme une formalité que comme une nécessité, les étudiants admettant, à tort, l'idée qu'il suffit de connaître le volume du contenu scientifique qui doit être enseigné, respectivement les idées principales des leçons. Malheureusement, dans la pratique des classes données par les étudiants, on rencontre parfois des erreurs scientifiques dans les projets didactiques, lesquelles ne sont nullement dues aux émotions tant invoquées. Ces erreurs (qui sont découvertes par les dirigeants de la pratique pédagogique bien avant le déroulement des classes) mettent en évidence une préparation de spécialité insatisfaisante, la mauvaise compréhension de certaines notions, de phénomènes

et processus chimiques, mais aussi une certaine superficialité manifestée dans l'élaboration des projets didactiques des activités afférentes et le manque du désir d'approfondir le mieux possible les aspects abordés.

La prémisse essentielle d'une activité didactique réussie est la correction du contenu scientifique véhiculé, mais cela n'assure pas toujours le succès de l'activité en question.

Si les étudiants n'ont pas encore compris cela (à travers les cours de didactique de la chimie), la pratique pédagogique est une bonne occasion de prendre conscience du fait qu'un certain contenu d'idées, fût-il bien correct du point de vue scientifique, ne constitue que la condition nécessaire et non pas suffisante d'une activité didactique réussie. Ce contenu doit être soumis à l'opération d'interprétation méthodique, c'est-à-dire de transposition didactique, afin de pouvoir le faire véhiculer dans une activité instructive entraînant une classe d'élèves, caractérisée par: un niveau général de préparation en chimie, des particularités psychologiques liées à l'âge et individuelles, une certaine motivation, un certain intérêt etc. en tenant compte des ressources matérielles dont elle dispose et d'une série de facteurs de nature organisatrice tels que l'espace, le temps etc.

Loin de s'identifier avec les moments principaux de l'activité didactique ou avec ce qu'il faut réaliser, l'activité de mise en oeuvre du contenu scientifique, de structuration logique et accesible de celui-ci, suppose l'appel aux connaissances de méthodologie, de psychologie et de pédagogie, acquises par les étudiants et bien entendu, à leurs connaissances de chimie, à leur culture générale, tout cela ayant pour but de réaliser des corrélations intra- et interdisciplinaires. Ainsi, par la mise en application de la conception systémique dans l'approche de la chimie, on réussira, petit à petit, à former aux élèves la vision systémique sur la réalité.

Au cours du déroulement du stage pratique, les étudiants peuvent se convaincre du fait que le projet didactique représente une structure flexible à fonction de repère et du fait qu'il ne faut pas diminuer l'importance de la flexibilité de l'enseignant, de la créativité et de la spontaneité de celui-ci, d'autant plus que les prescriptions théoriques et méthodologiques dont on dispose, ne sont pas suffisantes pour concevoir et organiser les situations d'apprentissage des élèves dans tous les contextes situationnels qui surgissent dans la pratique de l'instruction. Cependant, il y a quelques éléments d'un projet didactique qu'il faut clairement préciser pour assurer la cohérence interne et le rendement de l'activité. C'est justement sur ces éléments-là que nous ferons porter notre attention dans ce qui suit.

Les objectifs opérationnels ont dans la pratique instructive une importance tout à fait spéciale, puisque leur rôle est d'orienter le processus d'enseignement-apprentissage et ceux-ci constituent les points de repère pour établir le rendement de ce processus. Mais beaucoup d'étudiants les considèrent comme "des instruments formels" ou bien les identifient avec les idées principales de la leçon (avec ce que le professeur doit enseigner), ce qui montre que les étudiants en question n'ont pas assimilé, comme il l'aurait fallu, la théorie des objectifs opérationnels ou bien qu'ils n'en ont pas compris l'utilité pratique. Ces étudiants-là ignorent, en fait, que les objectifs ne font pas référence aux professeurs, mais aux

élèves, en visant aux performances intellectuelles et/ou pratiques de ceux-ci. Il faut dire aussi que nombre d'étudiants ne font préciser dans la formulation de l'objectif opérationnel que la performance à laquelle on vise, en utilisant souvent des verbes à polyvalence sémantique, négligeant le fait que la raison de la formulation des objectifs opérationnels consiste à diriger et à évaluer le processus d'instruction par leur intermédiaire.

En fonction des objectifs opérationnels préalablement établis, on imagine la stratégie d'instruction, point de croisement de connaissances appartenant à toutes les disciplines psychopédagogiques étudiées, à savoir: la didactique de la chimie, la pédagogie et la psychologie.

La difficulté à laquelle se heurtent les étudiants, quant à l'élaboration du projet des stratégies d'instruction, est liée à l'adaptation de celles-ci au niveau général de la classe d'élèves et à la différenciation des stratégies didactiques à l'intérieur de la même classe, chose que les étudiants prennent moins en consideration. Concernant le premier aspect, on a pu constater que, même si les étudiants effectuaient des assistances aux activités didactiques organisées avec les classes où ils allaient enseigner, ils se heurtaient à des difficultés liées au choix du type de stratégie didactique et à l'analyse détaillée de celle-ci. Ces difficultés sont dues, en principal, aux facteurs suivants: la méconnaissance du contenu de tous les manuels scolaires, respectivement le manque de la vision systémique sur ces manuels et la méconnaissance du programme d'enseignement afférent à la classe en question (élements qui offriraient une image sur les connaissances dont les élèves devraient disposer à ce moment-là), la connaissance insuffisante du niveau des groupes d'une classe, des types et des mécanismes d'apprentissage adoptés par les élèves, la manque d'expérience didactique dans le déroulement du dialogue entre le professeur et les élèves et entre les élèves eux- mêmes, respectivement dans la façon de formuler les questions qui soient adressées aux élèves et les questions d'appui.

Pour établir l'efficacité des stratégies didactiques, les résultats des activités didactiques, dans l'étape d'élaboration du projet didactique, on établit les épreuves d'évaluation, en ayant comme point de départ et de repère permanent à la fois, toujours les objectifs opérationnels. L'adaptation des épreuves d'évaluation aux objectifs opérationnels est une conséquence naturelle de la structuration et de l'évaluation du processus instructif au moyen des objectifs sus-mentionnés. Il faut très bien préciser dans le projet didactique les épreuves d'évaluation qui doivent mesurer avec exactitude les performances intellectuelles et/ou pratiques que les objectifs avec lequels elles sont en relation décrivent, afin de pouvoir fournir des informations réelles quant à l'aboutissement, total ou partiel de ces objectifs-là. L'erreur la plus fréquente que les étudiants commettent dans leur pratique pédagogique lorsqu'il s'agit d'établir les épreuves d'évaluation, consiste à attribuer, sans raison, ce statut à certaines questions ou tâches didactiques qui ne relevent pas de la réalisation de la part des élèves des performances prévues dans les objectifs opérationnels, qui ne supposent que l'effort de mémoriser et de répéter les informations transmises par le professeur, structurées de la même façon. Des questions qu'on adresse aux élèves à la fin de la classe ayant pour sujet "Les composés carbonylés", telles que: "Donnez la définition des composés

carbonylés", "Quelle est la classification des composés carbonylés ?", "Quelles sont les méthodes de préparation de ces composés ?" etc., ne réussissent qu'à réaliser une simple reprise ennuyeuse et dépourvue de valences formatives, des nouvelles connaissances, sans pouvoir surprendre vraiment le degré requis d'assimilation, de compréhension et d'approfondissement de ces connaissances; alors que des questions du genre: "Précisez lesquelles des substances suivantes sont des composés carbonylés, précisez également les aldéhydes et les cétones et argumentez la réponse", "Donnez le plus de modalités possibles d'obtention des dérivés du propane", réussissent à mettre en évidence la mesure dont les élèves maîtrisent les nouvelles acquisitions. Il est extrêmement important que les étudiants soient convaincus du fait que dans les activités didactiques modernes, l'évaluation ne représente plus une étape finale telle qu'elle a été considerée dans les activités traditionnelles; l'utilisation des méthodes à caractère actif authentique ainsi que des épreuves d'évaluation bien adaptées aux objectifs opérationnels, aux performances auxquelles ceux-ci visent, rend possible la réalisation d'une évaluation continue et formative au cours des activités éducatives.

En ce qui concerne la réalisation pratique des activités didactiques, les difficultés les plus fréquentes sont liées à des aspects tels que:

- les émotions inhérentes dues au nouveau statut des étudiants, d'où résultent l'impossibilité des pratiquants de se détacher totalement de leur projet didactique et l'impossibilité de ceux-ci de s'adapter au spécifique des situations d'instruction concrètes, devant la classe, respectivement la flexibilité du professeur;
- la maîtrise de la classe, la préoccupation de l'étudiant pour imposer sa propre personnalité devant les élèves, l'observation de toutes les catégories d'élèves;
- l'effort de capter et de maintenir l'attention des élèves;
- l'activation de toutes les catégories d'élèves par l'utilisation de méthodes et de moyens didactiques adéquats;
- la (non)-réalisation de l'accessibilité du nouveau contenu dans la totalité de ses séquences ou seulement dans le cas de certaines séquences, la présentation de ce contenu à un niveau trop élevé pou les élèves ou bien l'utilisation d'un langage peu accessible aux élèves;
- le découragement produit par les réactions de la classe ou d'une catégorie d'élèves;
- le manque d'expérience dans l'exploitation des interventions des élèves ou de leurs réponses aux questions du professeur;
- le manque d'expérience dans la façon d'initier et de diriger le dialogue entre les élèves et le professeur et entre les élèves eux-mêmes;
- la maîtise insuffisante de la méthodologie de la pratique des expériences dans le laboratoire;
- la mauvaise maîtrise de la méthodologie de la résolution des problèmes de chimie;

- la valorisation insuffisante de l'applicabilité des connaissances de chimie dans la vie quotidienne, des corrélations entre la théorie et la pratique;
- le découragement dû au fait qu'on n'a pas parcouru la matière en entier, conformément aux planning qui figure dans le projet de l'activité didactique.

Le comportement du futur enseignant pendant les activités didactiques a, lui aussi, sa part de contribution à la réussite de celles-ci. Inévitablement, au moment où les étudiants se trouvent devant la classe d'élèves, assumant le rôle du professeur, ils deviennent des exemples à suivre par les élèves, par toute leur présence, par leur attitude à l'égard des élèves, par la capacité de se maîtriser eux-mêmes, par leur présence d'esprit, par le style didactique adopté, par les langages verbal et non-verbal auxquels ils ont recours.

À notre avis, un grand nombre de difficultés que les étudiants doivent surmonter dans leurs stages pratiques, proviennent du fait qu'ils négligent leur rôle, en tant que professeurs, dans les activités didactiques en ce qui concerne l'organisation, la direction et le contrôle de l'activité d'apprentissage des élèves. Désireux d'enseigner, autrement dit de présenter ce qu'ils ont noté dans leur projet d'activité didactique, les étudiants oublient qu'au centre de leur attention et de leurs préoccupations doivent se situer la direction de l'activité d'apprentissage des élèves, la stimulation et le contrôle du dialogue entre le professeur et les élèves eux-mêmes et non pas la transmission d'un volume de connaissances, fussent-elles extrêment importantes.

La solution la plus adéquate dans de telles situtions est, à nos yeux, la réalisation d'un processus d'instruction jalonné par des objectifs opérationnels bien établis, correctement formulés, qu'il faut suivre persévéramment et évaluer continûment; nous y ajoutons la flexibilité dont le professeur doit faire preuve dans le choix du type d'activité didactique et dans l'élaboration du projet didactique, mais surtout dans l'organisation et la réalisation des situations d'instruction, de sorte que par leur succession, elles dirigent l'activité d'apprentissage des élèves.

Généralement, le climat psycho-social dans lequel se déroulent les activités didactiques est donné par l'attitude générale de professeur, par sa capacité empathique, par le style didactique que le professeur cultive et par les possibilités de son adaptation, au spécifique des situations d'apprentissage et aux particularités de la classe.

Étant donnés le manque de l'expérience pédagogique des étudiants et leur contact limité avec l'école, ils n'ont pas donné un contour définitif aux dominantes du style didactique, se préoccupant plutôt de faire apprendre aux élèves un volume d'informations que d'observer les relations entre le professeur et les élèves et les relations entre les élèves eux-mêmes. Le manque des contributions originales des étudiants dans la conception et la direction des activités didactiques et la représentation insufissante des séquences d'instruction conçues et dirigées d'une façon créatrice par les étudiants, sont dues partiellement à la même cause. D'autres obstacles contre la créativité didactique sont la timidité, la peur causée par l'erreur ou l'échec, le découragement, le manque de motivation ou de perséverance.

L'interface didactique de la chimie - pratique pédagogique inclut une multitude d'aspects et de facettes dont la complexité rend possible la réalisation d'analyses et des connexions des plus complexes. Mais nous affirmons que la découverte des difficultés auxquelles se confrontent les étudiants dans la pratique pédagogique (et qu'on retrouve probablement aux enseignants débutants) et l'effort de leur trouver une explication et une solution, ont une contribution majeure à l'amélioration de cette activité didactique et à la stimulation du désir de s'autoperfectionner. De plus, ce feed-back qu'offre le contrôle soutenu de la pratique pédagogique nous donne des informations extrêmement utilies pour la préparation, l'organisation et la direction des activités qui composent les sous-système de la formation continue des enseignants. Cette formation devra inclure, à nos yeux, pas seulement des activités de préparation théorique et méthodologique, mais aussi des activités pratiques - des activités d'enseignement/apprentissage de la chimie - qui constituent en fait la preuve de la compétence didactique des professeurs de chimie. On réalisera ainsi la continuité et l'interdépendance entre les deux sous-systèmes de préparation du corp enseignant - celui de la préparation initiale et celui de la préparation continue.

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A MODEL OF OVERCOMING THE CONCEPTIONS IN THE FIELD OF OPTICS

LILIANA CIASCAI

ABSTRACT. One of the concernments of physics didactic must be founding and outrunning - during the teaching-learning process - the cognitive obstacles caused by the spontaneous knowledge of the pupils, which act in the very moment of starting the assimilation process of some new notions. These activities provide outrunning of the obstacles meet in the knowledge assimilation process. This paper presents the study of the teaching -learning process and its efficiently evaluation in order to accomplish the purpose mentioned above.

1. *Conceptions, Obstacle-knowledge's and Obstacle-objectives*

The pupils have, about the concepts used in secondary teaching physics level (and not only) certain explaining models build by each of them, starting up from information acquired by different means, the social context, its' own reasoning schema and which are different of the physicist models (expressed at the representation level correspondingly to the pupils' age). In the literature these models have different names. Frequently they are called "representations"[1] or "conceptions"[2].

The researches accomplished by A. Giordan[3] about the "alosteric" model (a model build in order to overcame the conceptions) lead to establish the content of the concept. The model of conception, as A. Giordan says is the following:

The Conception = f(P, R,O, S, M) when:

P - the problem or the system of questions more or less explicit which activated the conception. The problem is, according A. Giordan, the "engine" of the activity;

R - the reference frame means all of the peripheral knowledge activated by the subject in order to express its conception.

O - the mental operations means the reasoning and operating ensemble that the subject which is educated can use. By means of these operations the subject correlate the components of the reference frame, make inferences and consequently produce and use the conception;

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[1] Astolfi, J.-P., Develay, M., (1989), *La didactique des sciences*, Paris, PUF, p. 31.

[2] Giordan, A., (1990), *O ambianß¾ pedagogic¾ pentru înv¾ßare. Modelul alosteic*, Bucure¿ti, În: Revista de pedagogie, 12, p. 13.

[3] Giordan, A., (1996), *Conceptions et raisonnements,* Paris, Cahiers pedagogiques, Nr. 344/345, p. 57-59.

S - the semantic frame means an interacting organization which results after operating on the reference frame. By means of this building of relations between the elements of the reference network the object produce an explanation, which satisfy him and which conferee a specified sense to his conception;

M - meaning - represent the signs, schemes and symbols ensemble necessary to produce and explain the conception.

Finally, these explaining systems called conceptions have the following characteristics:

- they form a coherently, structured ensemble which include knowledge and reasoning;

- they are well integrated in the cognitive structures of the pupil.

Because of this characteristics, the conceptions remain even after many teaching-learning sequences accomplished at different educational ages, "living together"[4] with the accurate knowledge. Their remanence impose, consider A. Giordan[2] the pupils active involving in the overcome process of these conceptions.

During the teaching-learning of a new content, the pupils' conceptions about this content is "interfering" with the new knowledge. If the two explaining systems are "coherent" then the "interference" is a "constructing" - one, that is the conceptions serve as basis for the new knowledge. If then are contradictories, the conceptions become an obstacle for learning a new content (the case of obstacle-knowledge). If the conceptions should determine only erasing the new knowledge (the mechanical memorizing followed by rapidly forgetting) or their insulation (then are appealed only in certain conditions) their effects wouldn't be so disastrous. Unfortunately, the conceptions don't act only as a simple gate which filter the new knowledge (they retain only some patterns of new knowledge, meanly those who agree with the conceptions, but, conformably W. Kaminski[5] as a reading-interpreting-gate which produce the deformation of the new knowledge (contradictory patterns are interpreted by the subject). Thus it is easy to imagine the effect of some obstacle-knowledge on the teaching-learning process of a new content. According to A. Giordan the teacher must know "the reasoning field that the pupil can imagine". Thus, the teacher cannot this time, imagine the possibly cognitive obstacles, can investigate their existence and can named them. J.L. Martinand quoted by J. P. Astolfi and M. Develay[4] show that the obstacle overcoming process must be mentioned as a behavior which must be attained in the teaching-learning process. Fixed once, such an objective, called by J. L. Martinand "obstacle-objective" it will be expressed in operating terms by means of classical methodology. After that, in order to overcome the obstacles, the teacher may design the most efficient strategies, namely the strategies that can approach the pupils reasoning to the correct one. We will present, as follows, a model for overcoming a cognitive obstacle.

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[4] Johsua, Samuel, Dupin, Jean-Jacques, (1989), *Representations et modelisations: le debat scientifique dans la classe et l'apprentissage de la physique,* Paris, Peter Lang, p. 53.

2. *Conceptions in the Field of Optics*

In an investigation realized for a optical theme following an extension of the W. Kaminski studies[5] L. Ciascai, M. Aştilean, L. Chicinaş have ascertain the impossibility of the 281 subjects - pupils and teachers- to make a correct prediction about the following experimental problem: We suppose that on a screen it could be observed the image of the flame of one candle, the image being obtained by means of a thin concave lens. Draw what it well be seen on the screen if the surface of the lens is partially covered as show the figures bellow (you will complete the schemes justifying and naming each constructive element).

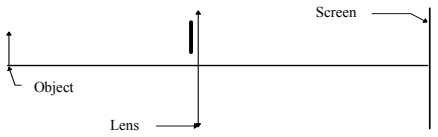


Figure 1a

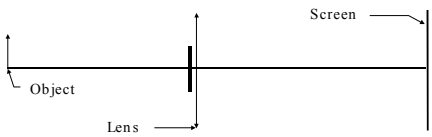


Figure 1b

The answers of the subjects, asserted by the constructions given bellow where: a) I don t know or fantasy; b) it can be see nothing (2a,.b); c) a partial image of the object (3a, b); d) the entire image (4a, b).

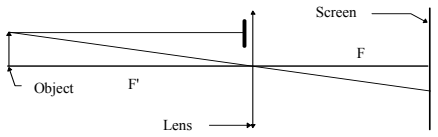


Figure 2a

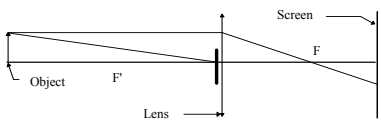


Figure 2b

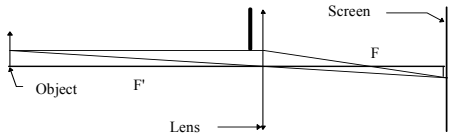


Figure 3a

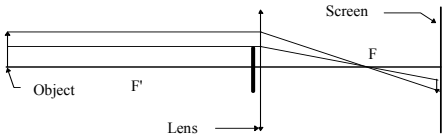


Figure 3b

[5] Kaminski, W., (1989), *Conceptions des enfants (et des autres) sur la lumiere,* Paris, Dans: Bulletin de l Union des Physiciens, p. 716.

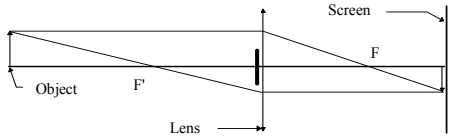


Figure 4a

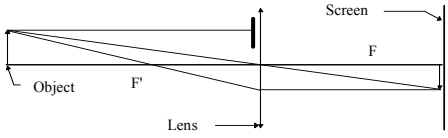


Figure 4b

The experimental reproducing of the generic fact described in the content of the problem allow us to observe the presence on the screen of the entire image independently of the covering mode of the lens. The inability of the subjects to realize the correct prediction is caused by the following conceptions: a) the lines draw in order to build the image represents light-rays and consequently b) only certain points of the lens contribute at the forming of the image. c) a model is not only a partially description of reality but a complete one (the subjects really believe that only certain light rays contribute at the forming of the image). The graphical model based on "drawing rays " represent the first step in order to overcome the obstacle. In order to explain the formation of the image it is necessary to use the model "pencil of light rays", model which don't need to divide the surface of the lens. In the case of partially covering of the lens, any surface uncovered contribute to the forming on the screen of the image of all points of the object.

3. ***A Model of Overcoming the Conceptions***

We will present, as follows, a model of overcoming the conceptions mentioned above, this model being applied only to the pupils and students.

First stage. The analyze of the predictions and the work hypothesis: The subjects were divided in groups according their prediction and were asked that a representative of each group to justify at the blackboard the prediction of his group. Then the subjects were asked to discuss the explaining model exposed. When a subject in a group brought an argument which sustained an other prediction he moved in that group. Finally, after this debate, a new group was formed (respectively all subjects came to this group) which expressed "the image on the screen depends on the kind of making the obstacle... we could see or the entire image or the part of it".

Second stage. The "conflict situation": In this stage the subjects have realized the modeling of the content of the problem proposed. In order to do that, they used the physics equipment and a candle. The covering of the surface of the lens was made by means of punched disks or opaque adhesive strip. Then were formed groups, each group has realized its own covering of the surface. The systematic observation realized allow to see the existence on the screen of the entire image, independently of the kind of covering the surface of the lens.

The third stage. Solving the problem by reanalyzing the explaining model: After the experimental observation the subjects discovered that the image is formed when there is an uncovered part of the surface of the lens (this part contribute at the forming, on the screen, of the image of the all points of the objects). The next model expressed that from each point of the object a pencil of light-rays is coming up, reaches the uncovered surface of the lens and this part contribute at the forming, on the screen, of the image of all points of the object.

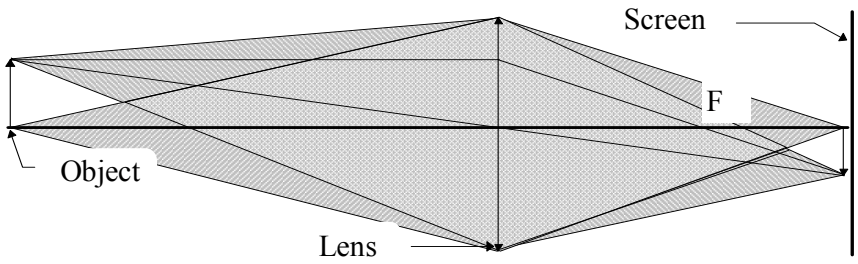


Figure 5.

In conclusion, in the case that we want to analyze or explain the images obtained we use the model "pencil of light-rays" and in the case that we want the position of images we use the model "drawing rays". The obstacle objective proposed for the teaching-learning activity described was: overcoming the conceptions that the group of light rays (that we call "drawing rays") models the entire light emitted or diffused by the object, and that the light which is coming up from the object interact only with a certain points of the lens. This objective was elaborated operationally at the taxonomic level of comprehending as follows: on the basis of the experimentally conclusions, the pupils have to differentiate the model "pencil of light rays" from the model "drawing rays" expressing that both represent only explaining models and indicating situation for using each of them. The evaluation show that the obstacle was overcome by 72%.

STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLIII, 1-2, 1998

USING THE INTERNET IN SCIENCES EDUCATIONAL PROCESS

CONSTANTIN PREDESCU, FLORENTINA CIOMOŞ

ABSTRACT. The aim of the paper is the Internet based staff training, especially for teacher of sciences. The intention is to help the teacher in the first step of preparation of the lesson, in respect with the cognitive psychology research.

KEYWORDS: Internet, staff training, teaching physics.

Reform, change, adjustment

It is well known the excessive rigidity of the teacher's outlooks and actions concerning coaching activity. Some pedagogical habits, the handbooks and auxiliary materials are the only support for their activity and that is why changing becomes imperiously needed. It involves the complexity, the dynamism, and the unforeseen situations, which characterize a changing educational system.

FIGURE 1

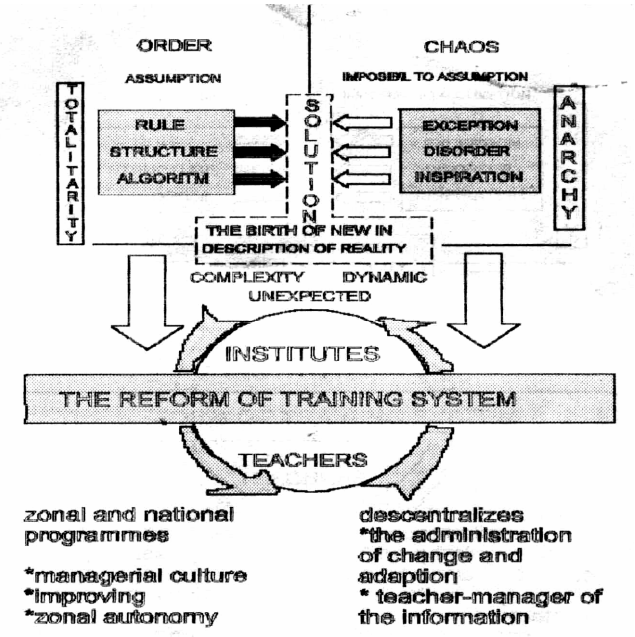


Fig. 1 shows:

a) The human society tendencies which oscillates between two extremes;
b) The problems due to the tensions appeared;
c) "The birth of new" - solution occurred at the frontier of tendencies;
d) defining aspects of the educational system reform - reform which evolves toward both senses (from national institutes, ministers to local units, schools).

For a better understanding of this reform process we appeal to a "modern theory of the complexity". The analysis on "changing systems" insists that an educational reform must be assisted by a new "managerial culture", whose nucleus consists in changing and adjusting to it.

The slow development of the reform results from a deficient informational stream between the institutions of the system. This deficiency has human or technical nature. The first one is difficult to be removed, but the other may be eliminated as it is due to the communication support of the information, which affects the speed of its transmission, storage and manipulation. There still is a risk concerning its truthful in the case of statistical data, exam subjects, etc.

Universities, Departments of schools and Departments of culture, some schools are connected to Internet. The new "educational network" will grow up the quality, volume and the communication's rate.

Teacher's speech

Most of the reform strategies started from ministers and ended in schools are not able to:

1) Find the real problems of the education,

2) Focus on teaching and learning processes, as this request transformation in the school activities.

Some new difficulties are encountered in experimental disciplines, which involve financial support in order to adjust the teaching aids to the new syllabi and the new presentation of the courses. The teacher's speech can be observed from three points of view:

1) Self - management in the professional field,

2) "The explicit speech", effectively taught at courses with theoretical character and practical laboratory lessons, for introducing the notional content parts;

3) "The implicit speech", resulting from the proposed learning manner, from the setting and the solving of the problems, speech that induces the conceptions and their application in other fields.

The most important aspect is the first one; the self-management being the motive for the explicit speech, on which relays the implicit one. Informational management for the preparation and unfolding the sciences lesson.

Management of the information for preparation and teaching sciences lesson

The teacher's speech in the new conditions implies:

a) The enrich of the given information by the association with some other historical, logical, philosophical information performed through an organization of managerial type;

b) The settle of the generalization and abstraction level of the given knowledge, considered as a personal act coming after a marketing type study.

c) The connected knowledge that must contain the basic information from management, sociology, psychology methodic, etc.;

d) The qualities of the non-verbal communication, which is a part of his explicit speech.

We can speak about a personal and professional management in the organization of information. Their shore, with the class, the arrangement of the supports they are deposited on. The bibliographical sources, the teaching aids, and materials, the computers contain and provide the information which is selected, processed and offered to the students. The information is presented on different material supports: handbooks, collections, solution notebooks, card, film strips disks.

The sorting criterions, filters, and structure of the databases are of a special importance. We suggest some of them: ***a***) type of information obtained; ***b***) the purpose of its use; ***c***) the manner of organization of the activity; ***d***) the place of communication; ***e***) the support on which it is stored; ***f***) the possibility of multiplication and use and handling of the support; ***g***) the access and the manipulation speed.

The information support is a high cost problem. That's why the Internet databases are more and more preferable as sources of information for teachers concerning professional management and scientific information.

Internet in teaching and learning process

The most important moment in preparing a lesson is to find the correlation between the levels of presentation of the scientific content with the cognitive process supported by the student.

For a successful correlation, the teacher must take into account:

a) The initial cognitive structure of the student;

b) A critical and careful analysis of the syllabi;

c) The available teaching aids.

This description permits a stratification of the teaching of a new physics notion in the following steps:

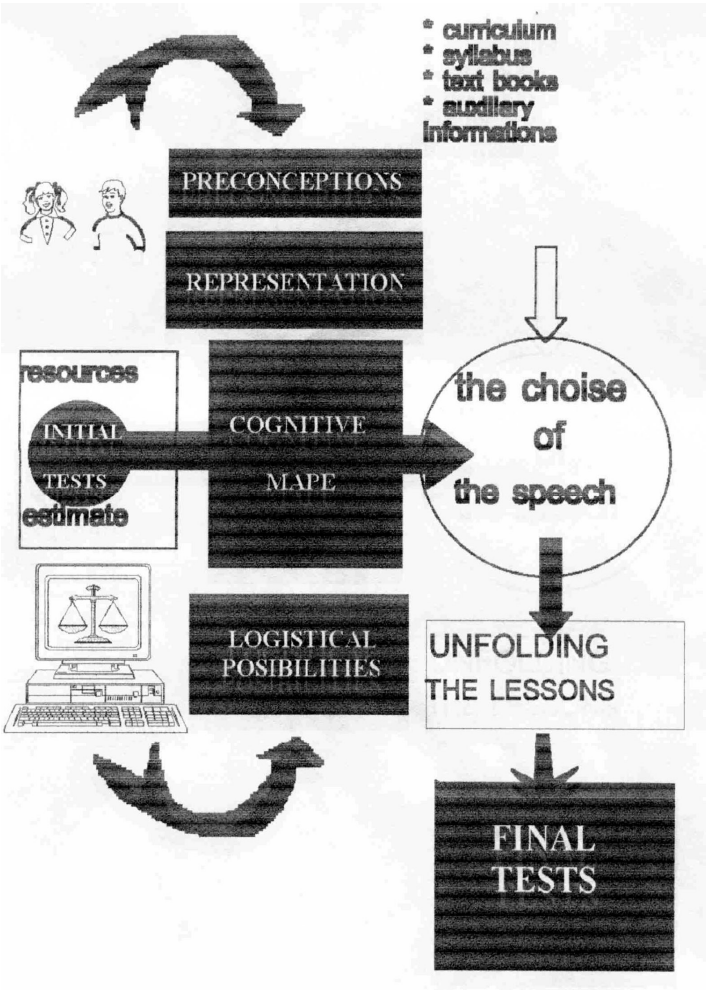
1) Find the pre-concept of the students,

2) Choose the prototype example,

3) Design the epistemic cycle.

The information collected on Internet could be very suitable to the first and second step of teaching new notions. Thus the pre-concepts of the students are the aims of some expert tests published on Internet. On the other hand, looking at the prototype examples, on Internet you may find database with such examples.

FIGURE 2

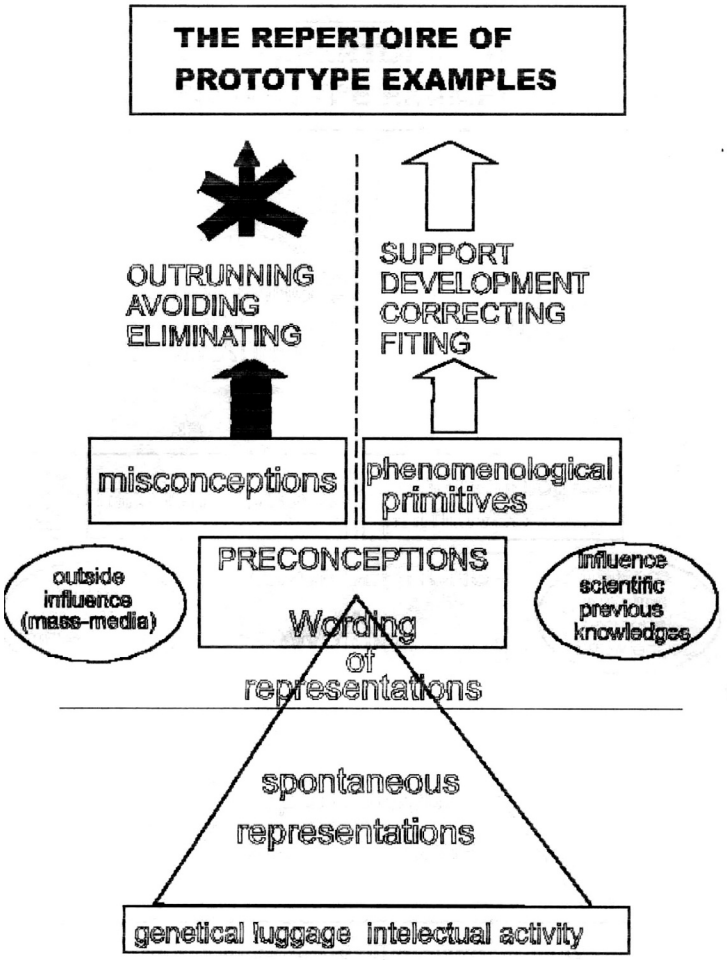


A. Test for identification of the preconceptions

The preconceptions imply missconceptions and fenomenological primitives; the so-called P-primitives (Hammer 1996) are represented in figure 3. A test for identification for preconceptions leads to new and valuable prototype examples.

The track-down of the pre-conceptions and the representations of the students about the new content in formed on the basis of some expert tests created by researchers. The adjustment to the concrete conditions of the teaching of physics from a country (curriculum, syllabi, handbooks, logistic equipment, the teachers preparation) become very difficult under the circumstances of the "rhythm of introduction" of the knowledge in the didactic process. The Internet represents a chance to eliminate these drawbacks, a possible way of efficient spread of the research results and the accomplishment of the feed backs.

FIGURE 3



B. Creation of a databank

The creation of a data bank containing the prototype - examples necessary for the teaching of physics, chimistry, biology and geography.

For the students, releasing the epistemic cycle - a notion used by T. Brody in order to describe the knowledge process, makes passing from the initial cognitive structures to the scientific constructs. The release is facilitated by the concrete offer contained in prototype - example, chosen by the teacher.

The prototype - example is the concept on which is based the description of the way the human mind produces, the object representations, and phenomena (Rosch 1980, "Theory of prototype"). The notions are not understand or used by defining notes; they are understood by illustrative examples. The easiest example became a prototype example. The name of the prototype is easier to learn than the category. "In spite of using the same words, the human mind follows different trajectories" (Miclea, 1991).

In the didactic process the prototype - example used are not definitively fixed as the students become to strongly attached to them.

A process of enrichment of the prototypes with new attributes that correspond to the new notion is necessary. In time it must be replaced by more representative prototypes (Predescu, Radu, 1990). The prototype that becomes an initial model of the epistemic cycle is a label of the condensed information, about knowledge in physics, chimistry, biology and geography.

The physics teacher is appreciated according to the number and diversity of the prototype examples which posses. The Internet as source of information organized in libraries, Web sites, research groups, etc., including programs with suggestive design offer to the teacher the opportunity to find good prototype examples. For the students, these examples are the starting points for the epistemic cycle.

C. The distance education applied in sciences

The classical learning in sciences using Internet is possible in many situations. For instance:

1) The teaching of small groups of bright students from the whole country, selected by regional and national stages on "virtual seminars". Some advantages are:

a) The simultaneous use of the same teaching sources; ***b***) the communication with the same professors; ***c***) the possibility of organizing some "virtual laboratories" of physics, where the physical experiments are simulated; ***d***) the testing of the students in the conditions similar to those from a competition; ***e***) the elimination of the travelling expenses.

2) The teaching of the handicapped students who are unable to go to school. The teaching process may be performed individually, with special elaborated program.

3) The learning of natural sciences by the students unable to travel because of the distances or geographic position. This is a part of a more expensive process, but we take into consideration a) the applied branches of economy, b) the DE investment for professional conversion on isolated regions will save the future money.

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STUDIA UNIVERSITATIS BABEŞ-BOLYAI, PSYCHOLOGIA-PAEDAGOGIA, XLIII, 1-2, 1998

SOCIAL OR NON-SOCIAL COGNITION? DEVELOPMENTAL PERSPECTIVES ON JOINT-ATTENTION

OANA BENGA

ABSTRACT. This study proposes a cognitive developmental neuroscience perspective on social cognition, based on genetic, neurophysiological and neuropsychological evidences. The special case of joint-attention is further analyzed. The developmental course of joint attentional skills during the second year of life has been correlated by many theorists with the developmental course of other social-cognitive skills, such as social referencing, gestural communication, and even language acquisition, during the same period. Though all these behaviours are socially grounded, which means acquired through interaction with the external environment, the neural constraints that permit and direct their learning must be also considered. The study examines possible relationships between context sensitive learning, which is thought to reflect the development of executive attention system, and joint attention.

In March 1994, an intriguing article of Eleanor J. Gibson was published in "Psychological Science". The worries concerning the question "Has Psychology a Future?" were coupled with a clear-cut agenda for psychology on its own - that is, focusing on behavior analysis, regardless of explanations from reductionist theories at some other level (neural, genetic, nuclear or artificial). The main reason of the author for such a categorical claim was the disbelief in the power of an interdisciplinary approach. So, she argued, the emergent theory waited for such a long time could not bring more than the sum of its parts, and in no case a new illuminating combination.

Another claim expressed in that article was that a single way could help the proper understanding of behavior, and that is the developmental approach. The hallmarks of human behavior are in at least a primitive form present at birth, but they develop and elaborate through time. These hallmarks are: agency (the self in control), prospectivity (the forward-looking character of behavior), flexibility (transferability of means), communicative creativity (multiplication of means of communication) and retrospectivity (backward-looking character of behavior). So the task of psychology is to study their dynamics of change.

To value development is not uncommon in the cognitive neuroscience, too (Johnson & Gilmore, 1996). But miles away from the defensive opinions expressed by E.J.Gibson. On the contrary, the advances in terms of neuroanatomy, brain imaging, behavioral and cognitive effects of brain lesions, ethology are thought to offer new bases for the full understanding of cognitive and perceptual development. Consider neuroimaging: the mapping of functional brain activity is now available even for very young subjects, due to the use of noninvasive techniques like f-MRI (functional magnetic resonance imaging). Also the use of HD-ERP (high-density event-related potentials) is not only possible, but also highly informative in the case of infants, because lower level of skull conductance and fewer cortical convolutions may improve the accuracy of recordings.

Another important tool widely used within the neuroscientific research is the marker task. A specific behavioral task which has been linked to one or more particular brain regions in adult primates by neuropsychological, neurophysiological, brain imaging studies (preferably by 2-3 of these methods) can be used to assess the development of performance at different ages, in different contexts. So, it can be shown whether and how the observed behavioral change is accounted for by known patterns of brain development.

Recently, molecular genetics has offered its help in the study of brain-behavior relationship through time. The most largely used method is that of lesioning particular genes from the genome of an animal - using the so called knock-out mice - to see what are the implications of such a maneuver on the nervous system structure and function.

The benefits of such an integrative approach are in those possible answers to many unsolved problems raised by psychology on its own.

The special case of social cognition is a good example of how it works. This kind of cognition is for many the core of our psychological life as human beings. It is defined through all the hallmarks listed by E.J. Gibson. And yet, this very cognition is still mysterious. In spite of all efforts, no satisfactory explanation has been given inside the exclusive boundaries of psychology. So, it is useful to consider, at this point, the offer of neurosciences.

A recent hypothesis links social cognition with the executive functions of the frontal lobe. There are many possible arguments for it.

GENETIC EVIDENCE

Recent intriguing results have shown that 45, X^m Turner-syndrome females (with the X chromosome of maternal origin) are more impaired than 45,X^p (X chromosome of paternal origin) in both social cognition and executive function (behavioural inhibition, planning ability) tasks. Such a finding leads to the idea of an imprinted genetic locus. An imprinted gene is one that is expressed or not, depending on the sex of the parent which has transmitted the gene. The imprint may act to silence the allele from one parent, so that normal development is dependent solely on the function of the allele from the other parent (Barlow, 1995, Pembrey, 1998).

It has been suggested that proximal to MLS gene at Xp22.3 could be the locus at which gene(s) that influence social adjustment as well as executive functions are expressed *only* from the paternally derived X chromosome (on the maternally derived X chromosome the locus is silenced).

Pro's for such a proposal can be considered the sex differences evident in pathology, as well as in normal functioning. The gene would be silenced in males, which inherit their single X from their mothers. This may explain the fact that males are markedly more vulnerable than females (2 to 4 times more) to pervasive developmental disorders affecting social adjustment, such as autism (Bailey, Philips & Rutter, 1996). On the other hand, Bjorklund & Kipp (1996) have shown gender differences on inhibition tasks, conceptually linked to corresponding differences in social behaviour.

As in the case of many other genes, this one here is supposed to act synergistically with susceptibility loci elsewhere on the genome, exerting an effect on social and cognitive abilities. It could underlie the development of sexual dimorphism in social behavior.

NEUROPSYCHOLOGICAL EVIDENCE

It is clear that frontal - and especially prefrontal cortex - is a heterogeneous region, both architecturally and functionally. The area anterior to the premotor cortex is the prefrontal cortex, usually divided in dorsolateral (Brodmann areas 46, 9 and 10) and ventral or orbitofrontal (Brodmann areas 11, 12, 25, 32 and 47). On the medial surface of frontal lobe is the cingulate gyrus, considered to be part of the limbic system (Brodmann areas 24 and 32, and the medial aspects of areas 6, 8, 9 and 10).

There is already a tradition of considering frontal lobe pathology linked with specific sets of deficits, dorsolateral area damage being invocated in case of impaired planning, distractibility, working-memory deficits, problem-solving, cognitive flexibility, all of which are popularly grouped under the "executive functions" (Fuster, 1989, Goldman-Rakic, 1990, Knight, 1991), and orbitofrontal damage in the loss of inhibitory control, affective disturbances, socially inappropriate behaviour, poor social integration (Stuss and Benson, 1984, Fuster, 1989, Knight, 1991) (apud Kertesz, 1994, Robin & Holyoak, 1995,). These syndromes have been established through lesions / lobotomies.

However, the localization of lesions in the frontal lobe syndrome is complex, and the clinical picture is variable. The overlap between the location-related syndromes described above is considerable, and controversy exists over their independent existence or even their definition.

Also, the age at which dysfunction begins is very important (Damasio and Anderson, 1993). The effects of lesions starting in childhood cause cognitive deficits related to organization and planning, coupled with lack of self regulation and abnormal social behavior.

How do various scientists deal with the coexistence of social and non-social deficits, linked to the same brain structure?

According to Damasio (1990) [apud Damasio and Anderson, 1993], it is likely that the human brain - and its most developed part, the prefrontal cortex - evolved to offer the organism its best chance of survival, first implemented in simple social environments, dominated by the needs for food, sex and avoidance of predators. The neural machinery required to perform response selection in a social setting has been co-opted to perform selections in other domains of knowledge, and thus help in general decision making, guidance of multiple tasks, planning and creativity. So, failure to choose the most advantageous option in a social setting may generalize to other domains. The ontogenetic story is analogue to the phylogenetic one: the automated decision-making system, which is responsible for event/somatic state conjunctions (reward/punishment), is then overlaid by cognitive strategy systems that perform cost-benefit analyses but remain connected neurophysiologically to the primitive systems. When the primitive part of the system fails, superimposed levels cannot operate efficiently.

Robin & Holyoak (1995) suggest a slightly different version. The central function of the frontal lobes is to support learning of complex relational concepts. Frontal damage will be much more detrimental if it precedes the period when major relational schemas required for mature thinking and behavior have been acquired. Once relational schemas have been formed, their subsequent use will be less dependent on prefrontal functions. Because social cognition is especially dependent on the ability to respond to subtle relationships between multiple cues, including contextual cues accumulated over time, it is particularly vulnerable to early insult.

AUTISM

McEvoy, Rogers and Pennington (1993) have shown that executive function and joint attention deficits are highly correlated, the potential reason being that both require some capacity to shift between competing alternatives (executive function - shift between two cognitive sets, joint attention - shift between two attentional perspectives).

A longitudinal study performed by Ozonoff and McEvoy (1994) revealed the fact that both executive function and theory of mind abilities are seriously deficient in autistic individuals, improve little with development, may never reach normal functioning levels and hit a developmental ceiling.

The metananalysis of Pennington and Ozonoff (1996) showed how in 13 of 14 studies a significant difference between autistic and control subjects could be found on at least one executive function measure, in 78% of 32 executive function tasks. Their inventory included a variety of executive function tasks, like Wisconsin Card Sorting Test, Word Fluency Task, Tower of Hanoi, Tower of London, A¯B task, Delayed Response Task, Go-NoGo task, Working Memory Sentence Span, Working Memory Counting Span.

Far from being exhaustive, these arguments suggest the possible links between the two classes of abilities, one purely social, the other much more embedded in "pure"cognitive processing.

The next question regards the nature of this possible connection. Are they independent deficits or somehow correlated? Their link goes beyond correlation? Can we say that one determines the other?

There can be no definite answer solely based on psychological explanations. One must benefit from the cognitive neuroscience offer, and see the whole in a developmental perspective.

ATTENTIONAL SYSTEMS "BOOTSTRAP" REPRESENTATIONAL SYSTEMS DURING DEVELOPMENT

This idea advanced by Johnson (1992), Johnson & Gilmore (1996) can shed some light on the issue of possible connection between the two sets of representations.

First is the fact that a certain determinism underlies development, with lower order orienting systems constraining the input to representational systems that, in turn, will select *even more restrictively* the input for later developing higher order attention systems. The result of such a spiral is that hierarchically arranged attention systems constrain neural plasticity for processing and manipulating particular classes of representational results. One more thing is that development flows in the direction of endogenous control of behavior, later developing attention systems being less input driven than early ones.

The timecourse of attentional development, as it is outlined by behavior and brain joint study, can be the following [apud Johnson, 1992, Posner & Rothbart, 1997]. At 3.5-4 months, dendritic growth and mielinization within the upper layers of the primary visual cortex enables the output to the FEF (frontal eye field) pathway, which make possible anticipatory eye movements and learning of complex sequences (Haith et al., 1988, Canfield & Haith, 1991).

The development of the parietal lobes around 4 months - as revealed by PET (Chugani, Phelps, Maziotta, 1987) explain endogenously cued covert shifts of attention (Johnson, Posner and Rothbart, 1991, 1994).

Finally, at the end of the first year of life an "anterior attention system" develops (Posner & Rothbart, 1990) assuring the regulation of behaviour. The primary form of regulation consists in distress control via attention focusing, suggesting an inhibitory control on the amygdala by mid frontal regions. By the end of the first year of life, direct control of attention is passed from caregivers to the infant. So, the mature visual orienting system is now more and more supervised, probably by anterior structures.

At the end of the first year the child also passes in resolving the conflict between reaching and the line of sight in order to retrieve an object in a box. He can look at the closed side of a box, yet reach through the open end to retrieve the toy inside the box (Diamond, 1991).

ATTENTION AT 18 MONTHS

Posner, Rothbart, Thomas-Thrapp and Gerardi (1995), Clohessy, Rundman, Gerardi, Posner and Rothbart (1995) have shown that children as young as 18 months

show a generalization of conflict resolution behaviors, transparent in the ability to learn *context dependent and ambiguous associations* (sequences like 1→2→1→3). This kind of learning has been linked to the development undergone by *executive attentional systems*, involving frontal networks (midfrontal lobe structures, mainly the anterior cingulate areas). The history of such a connection is related to adult studies (Curran & Keele, 1993) showing that unambiguous associations can be learned, presumably implicit, even when the adult is distracted with a secondary task known to occupy focal attention. The implicit form of skill learning seems to rely mainly upon subcortical structures.

The presence of distraction impairs the learning of context sensitive sequences, in which each association is ambiguous. This is why the ability to learn ambiguous associations could be a marker task for the development of more complex forms of attention related to executive control by anterior structures.

Neuroimaging studies support such a distinction, implicit sequence learning being linked to basal ganglia and parietal systems, and explicit sequence learning being linked to frontal activation. However, the ability to learn ambiguous associations appears to be somewhat intermediate between implicit learning and full awareness of the sequence. It requires attention, but not awareness. More recent PET studies have proved that even this kind of learning could have a correlate, Berns, Cohen & Mintun (1997) proving that complex sequence learning without awareness induces a right dorsolateral prefrontal activation during the task. It means simply that executive attention could operate without awareness.

Context dependent learning at 18 months has been analyzed in the light of other important acquisitions at the same age. Many other signs of higher level attention have been listed:

- "language spurt", multiple words utterances (Dore et al., 1976)
- the ability to hold representations in mind while operating upon them (Meltzoff, 1990, Ruff & Rothbart, 1996)
- self recognition in the mirror (Gallup, 1979, Lewis & Brooks-Gunn, 1979).

This whole range of behaviors suggests a more pronounced "frontalization" emerging at the age of 18 months [apud Posner and Rothbart, 1998].

JOINT-ATTENTION AT 18 MONTHS

Social cognition theorists approach development from a different perspective. Development is the result of the joint interaction between a world of adults which is highly structured in terms of interaction with children, and a child well equipped from birth with social-pragmatic skills.

That the child is from the very beginning included in a world of social and cultural routines is obvious. Social interactional routines such as feeding, diaper changing, bathing, interactive games, book reading, car trips are the formats of early interaction within which children acquire most of their knowledge. Routine cultural activities and events structure the learner's experience in the sense they display a shared referential context for the child and the adult (Tomasello, 1992, Nelson, 1993).

On the other hand, human beings are biologically social creatures; they recognize human voices, smile at human faces, match their behavior to that of other persons and adapt the rhythm of their interaction to that of human interactants. If these innate abilities are the so-called primary intersubjectivity (Trevarthen, 1979), they are not enough by themselves for entering into the vast majority of cultural activities. The decisive step is made when the child becomes able to coordinate attention to another person with attention to the objects that person is interacting with, and even, in many cases, to take the perspective of the adult on the object. And this happens around nine months, when the child begins to coordinate his visual attention on an object with the visual attention of another person on the same - he simply looks where the others are looking (Bakeman and Adamson, 1984) - behavior which is called joint-attention. The child might even do what the adult is doing with the object of joint attention (imitation; Meltzoff, 1988) or take in the feelings of the adult toward the object (social referencing; Uzgirirs, 1989)[apud Tomasello, 1995].

By the time of 18 months, a further improvement in these behaviors shows up. Tomasello (1995) proposed that children's use of predication imply the understanding of the fact that others can intentionally modulate their attention in response to linguistic and nonlinguistic means of communication, often while not changing their visual orientation. This equals the understanding that focus of attention is underdetermined by the actual perceptual situation, and thus that in the same perceptual situation the child and an adult may have different foci of attention.

The centrality of joint attention behaviors at this age is evident, also, considering the fact that prospective studies proved how the lack of such behaviors at 18 months predicts autism at 3 years.

Other social-cognitive skills developed around the same age [apud Tomasello, 1995]:

- social referencing (Moore and Corkum, 1995)
- gestural communication (Sigman and Kasari, 1995)
- language acquisition (Baldwin, 1991, 1993, Tomasello, 1995)

TOGETHER OR APART?

The emergence of these two types of behaviours at nearly the same age does not clarify the problem of their relationship. Can we say that there is a common underlying mechanism for both social and non-social attention? But if so, isn't it the case of a new homunculus invocated?

Or social attention is just a version of more "executive" abilities - which, surprisingly, according to a recent hypothesis of Posner & Rothbart (1998), might be derived from the same mastery of conflicts, with a very emotional primary origin?

The link is however provoking.

A study of these two classes of behaviors should help to clarify the possible connections between them: if on subjects of the same 18 months, the presence of one category of behaviors is a precise indicator that the other behavior is also present; if there is a superiority of girls over boys in the two categories of tasks; if the absence of the two might correlate with future pathology - like autism.

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GUDJONSSON SUGGESTIBILITY SCALE (FORM 2) A ROMANIAN STUDY ON RELIABILITY

ANCA DOMUȚA[1]

ABSTRACT. This paper wants to achieve a Gudjonsson Suggestibility Scale 2 reliability study for Romanian speakers. 80 subjects have been involved in order to determine the internal consistency reliability, and another 30 subjects for test-retest reliability. The internal consistency reliability was determined using the Alpha Cronbach coefficient.There was a 3 to 4 weeks break between the test and the retest. All correlation have been highly significant. The study outcome shows a high reliability for GSS 2 (the Romanian form).

KEYWORDS: interrogative suggestibility, Gudjonsson's Suggestibility Scales, study on reliability.

INTRODUCTION

Interrogative suggestibility is a special type of suggestibility which refers to the tendency of an individual's account of events to be altered by misleading information and interpersonal pressure within interviews (Gudjonsson, 1984, 1987). Gudjonsson and Clark (1986) have defined interrogative suggestibility as "the extent to which, within a closed social interaction, people come to accept messages communicated during formal questioning, at the result of which their subsequent behavioral response is affected". According to the social-psychological model of interrogative suggestibility proposed by Gudjonsson and Clark (1986), the interrogative suggestibility is the result of interactions between persons and environment. The model incorporates the "leading questions" and the "negative feedback" aspects of suggestibility described by Gudjonsson. The main applicability of this model is in police interrogation. According to this model interrogative suggestibility is seen as being dependent upon the coping strategies that people can generate and implement when confronted with the *uncertainty* and *expectation* of the interrogative suggestibility.

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There are three necessary aspects which must be taken in account when we talk about interrogative suggestibility:
1) *uncertainty*, which consist in the fact that witnesses do not know surely the right answer to a question and are therefore potentially open to suggestion.
2) *interpersonal thrust*, which consist in the relation between witness and interrogator intentions. If the perception of the interrogator's intentions are genuine then witnesses have more trust in the interrogator.
3) expectation of success: uncertainty and interpersonal thrust are necessary but not sufficient for the person to yield to suggestions; this is because if a person is uncertain about an answer he can give a reply of "not sure" or "I don't know". Many people are reluctant to declare their uncertainty because they believe that they should be able to provide a definite answer and feel that they are expected to do so.

In other words, people's reactions are different when they are confronted with the same situation to police interrogation, and these reactions depend upon the coping strategies that they use.

The hypotheses derived from the Gudjonsson and Clark model have been tested with the Gudjonsson's Suggestibility Scale - form 1 and form 2 (1984, 1987). These scales are the only reliable tests currently available for quantitatively assessing individual differences in interrogative suggestibility. The main advantage is that, unlike most other tests of suggestibility, the scales can be used in the legal context, such as police interviewing of witnesses or suspects.

METHOD

In order to use GSS 2 with Romanian subjects I translated the GSS 2 into Romanian, and then conducted a reliability study of the GSS 2 for the Romanian form.

In order to assess the interrogative suggestibility I used the Gudjonsson Suggestibility Scale, form 2 (GSS 2, Gudjonsson, 1987). GSS 2 contains a narrative paragraph describing an event, and 20 questions concerning that event. The scale was presented to the subjects for memory assessing, and the subjects were warned that the scale was assessing their memory, not their suggestibility, as it was in fact the case.

The GSS 2 was used in standard form. Thus, the content of the story was read out to the subject. After reading, it the examiner asked the subject to remember all he or she could about the content of the story. After a 50 minutes break, the subject was asked to do the same thing again. Then, the subject was asked the 20 interrogation questions concerning the content of the story. Fifteen out of the twenty questions were misleading, and five were not (five nonleading questions). The nonleading questions were used for disguising the real purpose of the test. After the subjects answered all the 20 questions, they were firmly told that they had made a number of errors, and because of that they necessarily had to go through the 20 questions once more.This time they had to give more accurate

answers to the questions. In another words, after answering the questions once, the subjects received a negative feed-back, and were requested to answer the questions again and more accurately.

GSS 2 asses interrogative suggestibility and verbal memory. Concerning interrogative suggestibility, GSS 2 score the following indexes:
i) "Yield 1" (y1). Each suggestive question on the first trial which had a wrong answer has been scored as y1. The range of possible values has been 0-15.
ii) "Yield 2" (y2). Each suggestive question on the second trial which had a wrong answer had been scored as y2. The range of possible values has been 0-15.
iii) "Shift" (s). A distinct change in the nature of answers to the 20 questions between the first and the second trial has been scored as a "Shift". The range of possible values for "Shift" has been 0-20.

The total suggestibility represents the sum of "Yield 1" and "Shift" and it's varying between 0 to 35.

The reliability of GSS 2 for Romanian form has been determined using:
a) internal consistency reliability;
b) test-retest reliability.

a) Internal consistency reliability.

If a test is to be valid, i.e. measures what it is intended to measure, then internal consistency must be high. This argument is used by the vast majority of test constructors (e.g. Guilford, 1956; Nunnaly, 1978) who write that high consistency is a prerequisite of high validity. The test correlations are limited by reliability. A test cannot correlate with anything more than highly than itself. Thus, the internal consistency reliability of a test limits its validity. Essentially, the validity of a test is measured by its correlation with a criterion of some kind.

The best index of internal consistency is Alpha Cronbach coefficient. Being consequent to this assumption I had been calculated alpha coefficient as a measure of internal consistency for GSS 2 (Romanian form).

There were a total of 80 subjects in the study concerning Alpha Cronbach coefficient for GSS 2. The subjects were students of the "Babeş-Bolyai" University of Cluj, Romania. Table 1 presents the values of alpha coefficient for "Yield" and "Shift".

Table 1. The values of alpha coefficient for GSS 2 (Romanian form)

	"Yield 1"	"Yield 2"	"Shift"
Alfa Cronbach	0,75	0,80	0,60

These coefficients are reflecting a high internal consistency of the items which operationalize interrogative suggestibility. We can say that Gudjonsson's Suggestibility Scale 2 (in Romanian form) has a high internal consistency, so all items of the scale asses interrogative suggestibility.

b) Test-retest reliability.

The reliability of a test over time is known as a test-retest reliability. This can be measured by correlating the scores from a set of subjects who take the test on two times. The correlation coefficient measures the degree of agreement between two sets of scores. The more similar they are, the higher the correlation coefficient, which runs from +1 to -1.

There was a total of 30 subjects participating to the study concerning test-retest reliability for GSS 2. They were students at "Babeş-Bolyai" University of Cluj, Romania. Time between the test and the retest was 3-4 weeks. Both administration has been realized using the same rules. The subjects had no experimental manipulation that could have influenced their interrogative suggestibility. Table 2 presents the values of test-retest correlation's and also the significance levels for each of them.

Table 2. Test-retest coefficient for GSS 2 (Romanian form) (N=30)

Types of correlation	Values of correlation's
Yield 1	0.74; p<0.01
Yield 2	0.79; p<0.01
Shift	0.56; p<0.05
Total suggestibility	0.80; p<0.01

All correlations are highly significant to p<0.01 (for "Yield " and "Total suggestibility") and to p<0.05 (for "Shift"). Table 3 gives the mean and standard deviation scores for GSS 2 (Romanian form)

Table 3. Mean and standard deviation scores on the GSS 2 (Romanian form) (N=80)

GSS 2	Mean	Standard deviation
Yield 1	2,58	2,09
Yield 2	2,63	2,39
Shift	1,70	1,44
Total suggestibility	4,28	3,07

DISCUSSION

The present study is the first one realized in Romania on Gudjonsson Suggestibility Scale. The aim of the study was to obtain a reliability instrument for the Romanian language in order to assess interrogative suggestibility.

The high internal consistency and the high test-retest correlation of the GSS 2 (Romania form) represents an improvement for using in Romania GSS 2 for research purpose and also in juridical practice or in questioning witnesses.

Gudjonsson Suggestibility Scale 2 (Romanian form) has to become an efficient instrument for the theoretical study of interrogative suggestibility and a proper instrument for juridical practice in order to identify suggestible witnesses and take special care of the accuracy of their testimony.

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HYPNOSIS AND OPERATIONAL READINESS THEORY. AN INFORMATION PROCESSING ACCOUNT

DANIEL DAVID[1]

ABSTRACT. This article titled "Hypnosis and operational readiness theory; an information processing account" is an updated development and a more detailed and structured presentation of our cognitive perspective of hypnosis, published one year ago in an article titled "Hypnosis as the cognitive psychologist view it". Our operational readiness theory assumes that hypnosis is a technique in which by hypnotic (self) induction procedure one creates a large operational readiness by the reduction of the constraints of the enviroment and of the executive ego on our information processing. Then, upon this large operational readiness, by vary instructions (e.g. imagination) or repeted suggestions one activates certain mental sets that subsequently will generate in conjuction with specific suggestions an involuntary hypnotic response.

KEYWORDS: hypnosis; operational readiness theory; hypnotherapy.

1.INTRODUCTION

This article presents a framework based on cognitive psychology for understanding hypnosis and hypnotic phenomena. Our previous work (David, 1996, 1997) was only a research programme for integrating hypnosis into the main stream of modern cognitive psychology with no references to a certain cognitive theory of hypnotic phenomena and to certain cognitive mechanisms of hypnosis. We simply militated for hypnosis to be penetrated by cognitive psychology by injecting more fundamental research of cognitive psychology in the field of hypnosis. It was our hope that this entreprise would clarify many mechanisms of hypnotic phenomena and it would increase the pragmatical impact of hypnosis.

This article is an updated development of our previous work meanwhile presenting in detailes our ***Operational Readiness Theory*** on hypnosis, its theoretical and practical implications, and also its relations with the well-known neodissociation theory and response-expectancy theory that nowadays, dominate and guide the fundamental and applied research on hypnosis.

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2. A BIT OF HISTORY

We will briefly describe the historical development of hypnosis. It will be based on an excelent and comprehensive review of hypnosis hystorical development (Spanos & Chaves, 1992) published in a classical book "Theories of Hypnosis. Current Models and Perspectives" edited by Lynn & Rhue (1992).

An onest review of all psychological healing techniques proves that hypnosis has been practiced, even if under many different labels, since the dawn of history. Nowadays, hypnosis is a respectable scientific psychoterapeutic technique being largely implemented in psychoterapeutic and residency programe.

2.1. Hypnosis from ancient times to the the mid-1700s

Probably the first hypnotist was Lord God. Genesis 2:21-22 contains what some people claim is the earliest recorded description of the hypnoanestesia (Udolf 1987): "And lord God caused a deep sleep to fall upon Adam; and he took one of his ribs, and closed up the flesh instead thereof; and from the rib, wich Lord God had taken from man, made he a women".

After that "God teaches his sons" the ancient Chinese, Indians, Persians, Egyptians, Hebrews, Greeks, Romans and others – "specially (even later) his beloved son Jesus"- to do the same thing. As a consequence more than 4.000 years ago Assyro-Babylonian physician-priests and Egyptian priests used exorcist-hypnotic methods to destroy the demons responsible for illness.

Others, as Hebrew, used in the same purpose magical rites invoking monotheistic God with prayers and mercy. In the Talmud, Kavanah supposes relaxation and concentration enhanced by accompaning chanting, breathing exercises, fixation on the letters in the Jewish alphabet that God spelled etc. All these methods are similar to the practice of Yoga, Taoism (see early Chinese), Zen, Budhism, Hinduism, Christian meditation including the repetitive prayers developed in the Byzantine Church.

The interrelated influence of mind-body, with its impact on health and illness, was known to the ancients. Hippocrates noticed that "soul sees quite well the affections suffered by the body". The legendary Asclepiodes alloyed pain by the stroking of his hands and the induction of sleep-like states. In others rites the Asclepiodes priests introduced pacients into the dream-healing rooms. After interpreting the dreams, he formulated the treatment consisting mainly in diverse rites and prayers. The real causes of healing in our dayterms in all these rites were relaxation, expectancies, imagery and suggestions what we would call nowaday cognitive-behaviour modifications and placebo effects.

After the era of demoniacal possesion (still alive in some places even nowadays) a new era began: the era of the magnetism. Starting with the observations of Petrus Pomponatius (1462-1526) magnetic theory assumed that a subtle magnetic influence from the planets and stars affects the mind and the body. The healing could be achived by magnets that could echilibrate the imbalance of the magnetic fluid in our body. The echilibration was most of the time preceded by a crisis expressed in motor convulsions, faint etc.

2.2. From the mid 1700s to 19th century or from mesmerism to hypnosis.

The most proeminent figure of this period was Franz Anton Mesmer (1734-1815). Mesmer borrowed exorcist –like technics (e.g. touch with the hand) from Father Gassner (a clasic who was a well-known authority in exorcism) and incorporated the theory and practice of magnetism (from the work of Paracelsus and Mead) elaborating what is called animal magnetism, a corner-stone for modern psychoterapy. Animal magnetism is a property of the animal body wich makes it sensitive to universal gravitation as Mesmer said in his Ph.D. dissertation "De planetarum influxu". Using this theoretical and technical framework Mesmer achieved a huge succes in treatment of over 15.000 cases. This success decayed when a commision was set up in 1784 by the Academie des Sciences from France to investigate Mesmer's animal magnetism cures. The commision was headed by Benjamin Franklin and was composed by great personalities of that period as Lavoasier, Guillotine, Deslon etc.

The commision concluded that magnetism whitout the imagination produces nothing. This statement reduced the influence of mesmerism in healing processes and methods. Despite of Deslon, a member of the commision, stating "if the imagination is so effective why do we not use it" his question has been ignored for 200 years. However certain Mesmer's colleggues and followers were still interested in the Mesmer's work even if some of they chose another perspective.

Marquis de Puysequr (1751-1825) is the precursor of modern hypnosis. Some of his pacients exhibited none of the expected convulsion or other signs of the crisis instead they appeared to enter in a state wich resembled very much with what is called today hypnosis.

Jose Faria (1756-1819) assumed that no special fluid was transmitted by the magnetizer; instead the stimulus for what he called "lucid sleep" come from the subject himself.

James Braid (1795-1860) became the father of modern hypnosis when he coined what before was mesmerism, hypnosis, his theoretical model being based upon sleep and monoideism.

Other many pioneers who expoused hypnotism were: Elliotson an english physician, Esdaile who performed numerous painless surgical operations by hypnosis and so on.

Despite of the wonderful work of all these Mesmer's followers, in comparison to the gold period of hypnosis –mid XVIIIth – from the end of the 18th century till the end of 19th century hypnosis went into an eclipse for the most part. This was because of: (1) the domination of the materialism perspective on science opposite to subjective perspective (see the work of Newton etc.); (2) the discovery of new medications useful in anesthesia so that the interest in hypnosis as pain management tool dropped dramatically: (3) the incapacity of scientific community to offer a choerent scientific theory of hypnosis to which the most researchers and practicians in the field adhere as happened in physics with Newton theory.

2.3. The end of 19th century to 20th century

The end of 19th century resuscitated the interest in hypnosis because of the development of two schools headed by prestigious scientists that were interested on hypnosis and its therapeutical values.

One school at Salpetriere was headed by Charcot. His team was composed of other prestigious scientists as Pierre Janet, Alfred Binet, Joseph Babinsky and for a short period Sigmund Freud. For Charcot and his colaborators both hysteria and hypnosis involved an underlying neuropathy that in interaction with a trauma or a hypnotic induction could generate functional anomalies met in both hysteria and hypnosis.

Other school at Nancy was headed by Bernheim, a student of Liebeault. Bernheim and his team conceptualized hypnosis not as an altered state of the organism as Charcot did but as a heightened suggestibility normal state as a consequence of the hypnotic induction procedure.

In this battle The Nancy school won and so far hypnosis continues to be seen as a state of heightened suggestibility. But this was only the begining because a new battle started concerning the cause of this hightened suggestibility, a battle that is continuing nowadays.

The first answer for heightened suggestibility was tried by Sigmund Freud: hypnotic subjects are hypersuggestible because of the regression. Under hypnosis subjects are repeating with the hypnotist early infantile modes of relating to objects, involving pasivity, compliance, submission and surrender. This theory was not developed in detailes because in short time Freud elaborated psychoanalysis and his interests on hypnosis dropped, because Freud thought that hypnosis just hid the symptoms and it did not resolve the causes of the symptoms as psychoanalysis did.

So hypnosis went again into eclipse. Janet, one of the three great psychoterapist of this period (the other two were Freud and Deslon) although he mantained alive hypnosis in his clinical practice stated that: "hypnosis is quite dead untill the day of its resurection".

The causes of the eclipse of the hypnosis were: (1) Freud, the single great personality that argued for psychological causes of mental and somatic disorders in an era of "physic causes", gave up hypnosis developing his own therapeutic technique-psychoanalysis; (2) the hypnosis was presented with an exaggerated optimism. Charcot sustained that he obtained success with hypnosis in over 90% of cases. When other practicians tried hypnosis in their practice and did not obtained success in as many cases as it was predicted they gave up hypnosis trying other therapeutical techniques: (3) again scientific community did not succeded to ofer a rigourous theory of hypnosis so that many sarlatans and fake theories appeared.

The development of behaviorism at the beginning of 20th century also contributed to this dropping of the interest on hypnosis that was seen too mentalistic and difficult to be studied objectively. Anyway in this period of eclipse, even marginally, some researches on hypnosis was done by researchers as Pavlov, Platonov, Hull etc. These researches even marginally, maintained the interest on hypnosis and even generated powerful theories of hypnotic phenomena.

For example, Pavlov considered that hypnosis would imply the same mechanism as sleep and could be explained by the concept of partial inhibition of neural cortex. Hull and Wolberg developed hypnosis mainly at methodological and practical level maintaining its impact on therapy and research.

The birth of cognitive psychology in the mid 20th century resuscitated the interest in mental factors, neglected by the behaviorism, and of course in hypnosis. Nowadays there are two main paradigms of hypnosis: (1) trance paradigm; (2) cognitive-behavioral paradigm. They will be detailed as following.

In conclusion, analysing the hystory of hypnosis we could say that hypnosis is damned to repeat its history in a quite perfect manner: gold period in mid / end 18th century / , obscurity until the mid / end 19th century /, gold period in mid / end 19th century /, obscurity until the mid / end 20th century /, gold period mid / end 20th century. What will happen in the future?. One can notice that each obscurity period was followed by a gold period that were characterized by strong dispute on the mechanisms of hypnosis. Researchers did not succede to offer a coherent perspective on hypnosis as would require a scientific paradigm according to Kuhn (1976) but only fractioned and unconciliable theories (as it happen in a paradigmatic period of science) and as a consequence the interest in hypnosis dropped. What will happen in future depends on our capacity to integrate and conciliate in a coerent perspective the two actual dominant paradigms on hypnosis.

Our hope is that cognitive perspective on psychology is a rigourous paradigm mature enough to offer a coerent perspective on hypnosis. In the meanwhile hypnosis must be seriously penetrated by fundamental research of experimental cognitive psychology otherwise we will expect another 100 year for a new gold period (sic!).

3. HYPNOSIS AS THE COGNITIVE PSYCHOLOGIST VIEW IT

Hypnosis is a social interaction in which one person (the hypnotist) offers suggestions to another person (the subject) for subjective, cognitive, behavioral and physiological modifications.

There are two main paradigms concerning hypnosis: (1) classic or trance paradigm; (2) cognitive-behavioral paradigm including social factors.

3.1. Trance Paradigm

Trance Paradigm has the next fundamental assumptions:

* hypnotic induction procedure is a necessary condition for generating hypnotic phenomena
* hypnotic susceptibility is conceptualized as a relatively stable traitlike attribute
* trance is a state of dissociation of consciousness, and this dissociation might explain hypnotic phenomena (hypnotic amnesia, arm catalepsy, hypnotic dream etc.).

Sintetically this position, in which might be located researchers like Hilgard, Kihlstrom, Bower, Spiegel etc., can be represented as in fig 1:

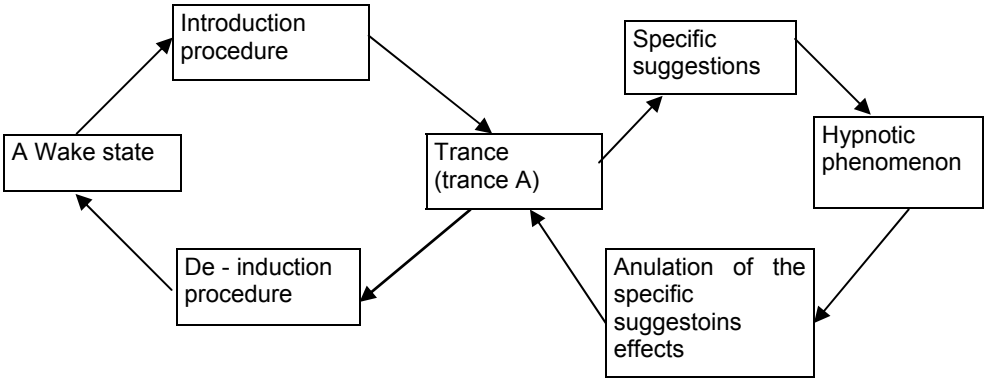

Fig 1. Trance paradigm (After Fellows, 1986)

The well-known theories of hypnosis which have their background in trance paradigm are (Lynn & Rhue, 1992):
Neodissociation perspective (Hilgard, Bower, Kihlstrom, Evans etc).
Psychological regression theory (Nash, From etc).
Anesis theory or hypnosis as relaxation (Edmonston).

From these theories the most influential is neodissociation theory that guides and stimulates research in the field, so it will be described in details as follow. As regarding the other two theories, regression and anesis, they are in evident regress, their impact on research and practice being low. Anyway they could be interesting to study from historical perspective because of their background in earlier theories of hypnosis (see Freud's perspective for psychological regression theory and Pavlov's perspectives for anesis theory).

3.1.1. Neodissociation theory (Hilgard, 1965, 1973, 1992).

Neodissociation perspective is one of the most dominant contemporary theory in classical trance paradigm. Neodissociationism theory has its background in the work of Pierre Janet (1925) and his classic dissociation theory. According to Janet dissociation is a defensive process in wich memories are split off and kept unintegrated, generating functional anomalies of hysteria and hypnosis. Both hysteria and hypnosis involve an underlying neuropathy. The interaction between, on one part, psychic trauma and hypnotic induction procedure and, on the other part, neuropathy, generates dissociation that explaines both functional anomalies of hysteria and hypnosis.

The use of term "neodissociation theory" has been selected by Hilgard to indicate that although the historical background is the classical dissociation theory,

the modern theory does not adhere to the same assumptions as the older theory did tying dissociation to psycho and neuropathological conditions.

Neodissociation theory assumes that there are multiple cognitive systems, each of which has some degree of autonomy, or cognitive structures in hierarhical arrangement under the control of an "executive ego". The executive ego plans and monitors the function of all cognitive systems of personality. Under hypnosis as a consequence of hypnotic induction procedure a disruption of the link between the cognitive system and the executive ego is produced and the disruption generates dissociative experience. The hypnotist influences the hypnotized responses (a cognitive system) by executive ego but an amnestic barrier alters reciprocal awareness between the executive ego and the cognitive system. The hypnotized subject may be unaware of the dissociated cognitive system that generate a certain response or may be aware of it but perceive the response involuntary (see fig. 2).

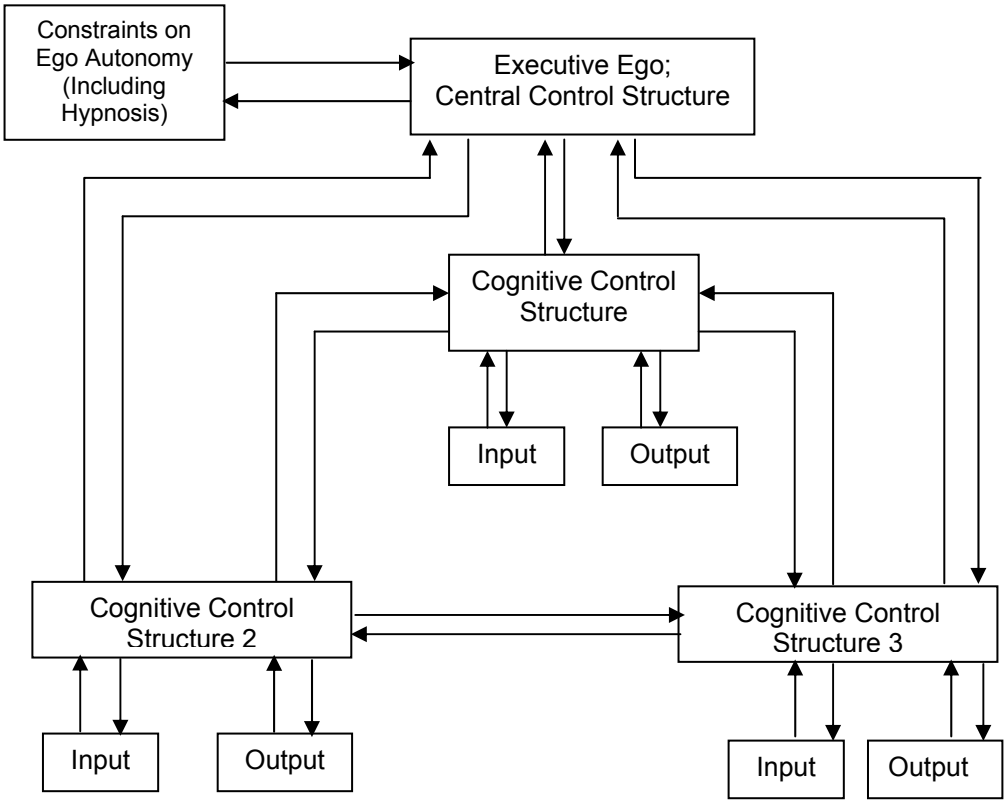

Fig. 2. Neodissociation theory (after Hilgard 1992)

In short, according to neodissociation theory hypnotic responses occur when the part of the person that responds to suggestions (cognitive system) is partially split off from the part associated with consciousness (executive ego).

Moreover an amnestic barrier prevents the executive ego from gaining direct (verbal) access to the information in the dissociated cognitive system. Anyway the executive ego does not transfer all its prerogatives to the hypnotist. A part of it – a hidden part- remain aware of what is happenning by monitoring the activity of the cognitive systems. Accessed by indirect techniques (automatic writing; talking) under hypnosis the hidden part could repart the information which belongs to the dissociated cognitive system.

Recently Bowers (1994) proposed a revised neodissociation theory. In the revised neodissociation theory the role of the executive ego is minimized. The hypnotist could directly influence the cognitive systems as the executive is disengaged. According to this dissociated control theory, there are no necessary attentional resources to generate hypnoyic responses. On the contrary, according to neodissociation theory attentional resources are necessary because in fact the hypnotist does not directly influence the cognitive systems but, he does so trough the executive ego of the subject, even if because of the amnestic barries the executive ego is not aware of its influence.

More than that according to Bowers'dissociated control theory, the presence of an amnestic barrier is not necessary for explaining the involuntarity of hypnotic responses as these responses are not initiated by the executive ego. Even in this case a part of the executive ego remains as a hidden observer to monitor the activity of the cognitive systems.

So far the experimental results support partially both forms of neodissociation theory. Dissociated control theory offers explanation for the involuntary hypnotic responses of one subset of highly hypnotizable subjects that are also high dissociators. Neodissociation theory predict better the hypnotic responses of one subset of highly hypnotizable subject but low dissociators (King &Council, in press). So that depending on the characteristics of the subjects (ex: dissociation ability) both theories could engage valid mechanisms of hypnotic phenomena.

3.2 Cognitive-Behavior Paradigm

Cognitive behavioral paradigme has the next assumtions:

* hypnotic induction procedure is not a necessary condition for generating hypnotic phenomena. It can be reduced to motivational task. So that hypnotic phenomena require either induction procedure or motivational task. Analysing induction Barber (1969, 1979) identified the following factors. (1) subjects are motivated to respond to suggestions; (2) subjects are told that it will be easy to respond to suggestions; (3) suggestions of drowsiness, eye closure and sleep are made; (4) the situation is defined as hypnosis by the subject. The first two factors form what Barber called motivational task and only they are necessary for generating hypnotic phenomena.

*hypnotic susceptibility involves a relatively modificable interrelated set of social-cognitive skills and attitudes (Gorassini & Spanos, 1986; Spanos,1971-see fig. 3)

*trance is a state of dissociation of the consciouness but the dissociation does not explain hypnotic phenomena. Dissociation itself is a hypnotic phenomenon that requires explanation. So that neodissociation theory elaborated by Hilgard is a descriptive theory not an explicativ one. Used as an explicative theory it becames a tautology. Another problem with the neodissociation theory is that it requires the occurrence of selective amnesia for explaning or describing hypnotic phenomena (see 3. 1.1.). But selective amnesia is a difficult response and spontaneous amnesia is even less common (Kirsch & Lynn, 1997). So that there is unappealing idea of attemting to explain routine hypnotic phenomena in terms of an unusual one-hypnotic amnesia-. More than that both neodissociation theory and dissociated control assume the existence of many cognitive systems that generate the hypnotic responses; but it is not clear at all how many cognitve systems exist and how we could identify them to be study. Also these two theories of hypnosis can not explain self-hypnosis that is an routine phenomenon. As a consequence, it is necessary an explicative theory of hypnosis to be elaborated; this is the main concern and interest of cognitive-behavior paradigm of hypnosis.

Sintetically this position in which can be located researchers like Barber, Spanos, Coe, Gorassini, Sarbin etc can be representated as in fig. 3.

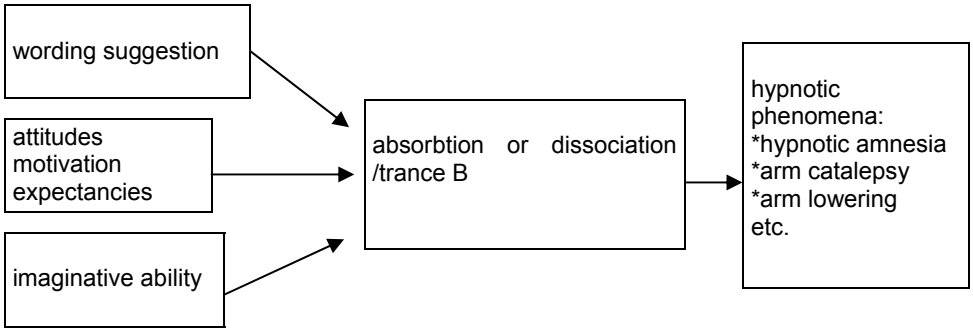

Fig 3. Cognitive-behavioral paradigm (After Fellows, 1986)

Barber (1969, 1979) made a distinction between trance A and trance B. Trance A is the result of induction procedure and trance B is the result of specific suggestions after motivational task (see fig 3). But he remained to the idea that trance A is not necessary for hypnotic phenomena.

The well-known theories of hypnosis that have their background in cognitive-behavior paradigme are (Lynn & Rhue, 1992):

1. Response expectancy theory (Kirch, Lynn);
2. Role theory (Sarbin,Coe);
3. Sociocognitive perspective (Barber, Spanos);
4. A non state socio-cognitive perspective (Wagstaff)
5. The ecosystemic theory (Fourie).

Among these theories response expectancy theory has received good experimental support integrating also the valid assumptions of the other cognitive behavioral theories in an integrative model. This is the reason why we present this theory in details as it follows.

3.2.1. Response expectancies theory (Kirsch & Lynn, 1997).

According to Response Expectancies Theory, experiences of volition and involuntariness in and out of hypnosis are constructions or interpretations. They are possible because of the high degree of automaticity that is a characteristic of all complex behavior, including routinized and novel behavior. The triggering of both the behaviors and the sensations are possible by (1) an intentionally adopted plan- in case of ruotinized responses and (2) the formation of a specific or generalized response expectancy – in case of a novel behavior. Response expectancy is a cognitive set which serves to respond appropriately to suggestions and it is functionally equivalent to implementation intentions taking the form, "emit response X when situation Y is encountered". Implementation intention lead to automatic initiation of the intended response (X) when the appropiate situational cues are met (Y). The classification of a response set as either an expectancy or an intention and the experience of the response as volitional or nonvolitional depend on the interpretations derived from instructional cues and prior beliefs. If the response is interpreted to be volitional, the set is an intention. If the response is interpreted to be nonvolitional, the set is an expectancy. So that hypnotic behaviour is automatic either because it is an expresion of specific and/or generalised response expectancies, or it is a routinized behaviour in an intentionally adopted plan. In both cases, because most of the people enter the hypnotic situations to experience the behaviours as nonvolitional, the response set will be clasified as expectancy and the experience will be of involuntariness. If people did not enter the hypnotic situation with that expectancy than the response sets would be classified as intended. In other words, most of our behaviors both routinized and novel are generated automaticaly. If the automatic generated behavior is interpreted to be nonvolitional (because of wording suggestions, beliefs and expectancies of the subjects etc.) the experience will be of involuntariness. If the automaticaly generated behavior is interpreted to be volitional (because it is goal directed and was preceded by the formation of a conscious intention) the experience will be of voluntariness.

3.3. New tendencies and a short summary

Beside these two paradigms on hypnosis one might argue that there is another paradigm, a clinical one, where could be located theories as: (1). Ericksonian perspective on hypnosis (Erickson, Rossi); (2). Locksmith model (Joseph, Barber). In fact these two perspectives are not theories because they are not well theoretically articulated and it is too much to say they constitue a clinical paradigm. So that they could be located ontologically in trance paradigm not as theories but as models on hypnosis.

In conclusion these two paradigms (trance and cognitive paradigm) have a great impact on contemporary research upon hypnosis in a quite equivalent way. However, in the past few years as a results of the development of cognitive psychology, cognitive-behavior paradigm on hypnosis stated to be penetrated and injected with fundamental research from cognitive psychology, generating what I would call modern cognitive-behavior paradigm. This fact gave a slightly advantage of cognitive-behavior paradigm in comparison to trance paradigm although trance paradigm is still quite influential.

3.4. New contemporary perspectives

Although cognitive-behavioral perspective is the dominant one neodissociation theory is still very influencial. Despite numerous tendencies to unify these two perspective there is a huge gap between them. The well-known integrative perspective are (Lynn & Rhue, 1992):

1. a synergic model of hypnosis (Nadon, Laurence, Perry)
2. contextual model (Sheenan)
3. the constructivist model (Mc Cankey);
4. social-psychobiological model (Banyai).

But these integrative perspectives are too weak and too conciliant trying to save both neodissociation and cognitive-behavioral theories. They have not a very clear ontology. Or ontology gives the epistemology. So we believe they have no future. The integrative perspective is more likely to appear in one of the two paradigme when an experimental rigurous theory will explain the fundamentals of hypnosis in an elegant, simple and experimentally verified way as response expectancy theorie could be.

Our perspective, that is to be presented as follows tends to be an integrative one with a very clear ontology based on cognitive perspective on hypnosis. More than that in elaborating our cognitive perspective on hypnosis we used as intelectual tools Ocam's razor and the acid test of experimental support, starting from fundamental assumptions of Kirsch & Lynn's response expectancy theory which is in fact the core and starting point of our operational readiness theory. Also we included recent developments on cognitive psychology (e.g. conexionist modelling, automatization concept etc.) and past research of social-cognitive theory of hypnosis (Barber, 1969; 1979, Spanos, 1971 etc.).

4. OPERATIONAL READINESS THEORY

4.1.Basic assumptions about hypnosis

1. The domain of hypnosis can be delineated. As Hilgard (1992) argued it would appear to be unwise to device a theory about phenomena that are not well recognized to fit into a common category. The domain of hypnosis is constituded of the phenomena well described in hypnotic susceptibility scales.

2. Even if each hypnotic phenomenon may and in fact requires different explanations (e. g. hypnotic amnesia in comparison to arm lowering) there is something common to all hypnotic phenomena and this comune factor could justify a theory of hypnosis. This comune factor is the subjective experience of the involuntariness of each generated hypnotic response that is viewed by many as the acid test of whether a response is genuinly hypnotic or a sham

3. Suggestions and suggestibility are important mechanisms of hypnotic response.

4. Hypnosis is a technique by which one generates specific subjective, cognitive, behavioral and psychological responses that constitute the domain of hypnosis.

5. Neodissociation theory and cognitive-behavior theories are not in opposition. They have different purposes and they aproach different level. Neodissociation theory is a descriptive one about what the subject experiences at the subjective level. Cognitive-behavioral theory is an explicative one about what is happening at cognitive, behavioral, and physiological levels and why the subject experiences a dissociation at the subjective level. In other words the experience at the subjective level (described by neodissociation theory) is seen as a consequence of the interaction between cognitive, behavior and physiological levels, interaction described and explained by cognitive-behavioral theory.

4.2. Theoretical concepts, principles and mechanisms

Any response of human beeing is generated by information processing (and knowledge) and mantained by its consequences (David, 1996). The representation of knowledge in the human cognitive system can be simulated by a conexionist network (Miclea, 1994). A conexionist network consists in an interrelated set of cognitive units that in fact represent our knowledge. The conections between the cognitive units have different strenght and they could be inhibitive, excitative or neutral ones. At the moment, in our cognitive system there is an activated pattern of knowledge consisting in certain mental sets of activated, inhibited or simple dezactivated knowledge. This pattern generates what we call operational readiness. Operational readiness refers to the disposition of our cognitive system to generate a certain class of responses (in case of activated or less activated mental sets) and no other classes of responses (in case of inhibited mental sets) in the interaction with certain stimuli. If a stimulus fits an activated mental set the generated response will be experienced as involuntary (Socolov, 1953). This is because the mental set being activated does not require more aditional attentional resourses for stimulus processing and response generation.
The more activated mental set is the more involuntary the generated response will be experienced (Socolov, 1953). If a stimulus fits an inhibited mental set the generated response will be experienced as voluntary. This is because the mental set being inhibited requires more attentional resourses for stimulus processing and response generation.

The enviroment

The enviroment automatically imposes constraints on our information processing and mental sets. These constraints were elaborated in our ontogenetic development. In our ontogenetic development we were tought what "is permited" to do and what is not in certain contexts. For example in a classroom we were tought that "permited "to read, write, learn etc. (we have the mental sets for these responses activated) and it is not permited to drink wine, dance on the catedra etc. (we have-some of us-the mental sets for these responses inhibited). Now imagine we are in a classroom and the teacher requires us to read a paragraph from a book. This is quite natural and our response would not require many attentional resourses, being initiated and experienced it would be quite involuntar because of its activated mental set in that context. Now imagine we are in the classroom an while I am reading a chapter the teacher, suddenly requires me, to undress, to sit up on the catedra, and to sing a song. I would feel rather strange and I would find this action unnatural. If I decide act like this I will experience it as requiring voluntary effort and control because of its inhibited mental set in that context.

The executive ego

The importance of planning was brought to attention in a book of Miller, Galantes & Prikram titled "Plans and the structure of Behavior" written in 1960. The human being is not only respondent to stimulus but he has plans and intentions understood as a conscious decision to execute an response in a specified enviroment circumstances. In modern cognitive psychology the nature of the executive ego as cognitive structure that generates plans and intentions is understood as an interrelated knowledge (or mental sets) about us and our past,present, and future experiences. The intentions and the plans generated by the executive ego imposes constraints on our information processing generating a certain operational readiness for acting according to our intentions. According to Golbruitzer (1993) implementation of intentions links anticipated situations to intended responses in the sense of "When X occurs, I`ll execute Y". This kind of intention has been demonstrated to lead to the automatic initiation of the intended behavior when the situation specified in the implementation intention is encountered. The concept is important here because it allows us to understand that even the initiation of novel behavior is associated with involuntary processes and not just the initiation of behavior that has been habitualized by frequent and consistent pairing of a given situation with a specific behavior.

The role of hypnosis

Generally speaking, hypnosis, more precisely hypnotic induction procedure reduce the constraints imposed on our information processing by enviroment and executive ego, generating this way, a larger operational readiness that could sustain a large spectrum of responses.

The reduction of the executive ego constraints

Instead of forming intentions for specific responses, hypnotized subjects delegate some control of their responses to the hypnotist so that the executive ego does not impose constraints on our information processing, generating this way a larger operational readiness (or in connexionist terms –a relaxation of the network).

By a larger operational readiness I mean that:

- there are no many inhibited mental sets so that more behaviours are possible to be experienced more involuntarily;
- most of the mental sets are dezactivated or have a rest of activation.
- there are a few activated mental sets that corespond to subjects expectancies about what is going to happen under hypnosis. Anyway, being unfrequently mental sets (e.g. hand lifting) they are generally not connected whit other mental sets by an inhibitive or excitative link but mainly a neutral one so that they do not interfere whith the function of the other mental sets.

When a stimulus (e.g. a suggestion) fits this kind of mental set (activated or dezactivated but not inhibited) in a relaxed network, few repetition of a stimulus will be enough to activate the mental set for generating a certain response. There is not necessary to allocate many attentional resources for activating the mental set because there is no strong inhibition of the other mental sets that are dezactivated themselves. More than that, in hypnosis various instructions often precede the suggestions. The instructions could manipulate the operational readiness so that the mental set of the next suggested response to be activated so that the sugested response will be experienced involuntarily. For example, before we suggest to our subject that he can hear the sounds of the wave he may be introduced to imagine himself near the sea, lied on the warm sand, he can see the blue collor of the sky etc. This instruction will activate the knowledge about what are the sounds of the wave. After this mental set activated the sugestion that he hears the sounds of the wave could be very real even if the subject is in the classroom at 200 miles from sea.

In the reduction of the executive ego constraints very important role have: (1) the positive attitudes of the subjects toward hypnotist and hypnosis and also toward being hypnotized; (2) a high motivation to be hypnotized. If these two conditions are met then the subject will give up forming intention himself, delegating some control of his responses to the hypnotist.

The reduction of the enviroment constraints

The reduction of the enviroment constraints has the same effect as the reduction of the executive ego-constraints: a larger operational readiness. The reduction of the enviroment contraints could affect operational readiness directly or indirectly (by influencing the activity of the executive ego, in fact, reducing the executive ego constraints -see for example the case of depersonalizing of subjects who are isolated from enviroment). So that a larger operational readiness could be achived by reducing the enviroment constraints. Hypnotic induction procedure has this mission. It is realised by:

1. making hypnosis in a quiet place (no many context stimulation);
2. asking the subject to find a confortable position (no many propriocepture stimulation);
3. asking the subject to close his eyes (no many context stimulation);
4. teaching the subject not to attend to enviroment stimuli by using his inhibitory resourses, but to focus his attentional resourses on certain internal or external stimulus (it will generate no many information processing of the enviroment stimuli and stimulating the habituation);
5. making sleep, relaxation or alert suggestions (it will generate no processing of enviroment but quite limited class of stimuli that has no a clear and specific effect on our mental sets-there is a neutral conection with the most of our mental sets).

4.3.Concluding remarks

Hypnosis is a technique in which by hypnotic (self) induction procedure one creates a large operational readiness reducing the constraints of the enviroment and the executive ego on our information processing. And then by various instructions and repeted sugesstions generating involuntar subjective, cognitive behavioral and psychological modifications. Hypnotic responses are experienced as involuntary because by vary instructions (eg. Imagination) and repeted suggestions upon a large operational readiness one activates a certain mental set that subsequently will generate (without requiring many attentional resources) in conjunction with specific suggestions an involuntary response.

More than that the activated mental sets interpret the ambiquous stimuli in concordance with their pattern (see also the impact os expectancies on false alarms in signal detection theory-Naish, 1986). If we have activated a mental set like this "when the hypnotist will say -your arm is lightly going up- I will feel my arm light and it will go up" then an ambiquous stimulus in hand (e.q. micromuscular movement) could be interpretated as a sensation of lighness and going up of the hand. So that the activated mental sets, or in other words our expectancies, are the fundamental factor for explaining the core of hypnosis-the involuntariness of hypnotic phenomena. Other factors (relaxation for example, or imagination etc.) could probably only modulate its effectiveness but in no case produce hypnotic responses without it.

Our theory fits the fundamental assumption of Kirsch & Lynn (1997) socio-cognitive response expectancy theory but brings new ideas that could stimulate the future research. These new developments concern:

(1) the effect of the reduction of the enviroment constraints;

(2) a detailed analysis of the mechanisms responsible for the activation of the mental sets, analysis negleted in Kirsch and Lynn theory, beyond Kirsch and Lynn`s concept of "generalized and specific implementation

intention" (see the concepts of operational readiness, vary instruction and repeted sugestions etc.);

(3) some of our behaviors not only are interpreted as voluntary but in fact, no matter what our interpretation is like, they are voluntary because their mental sets are inhibited and in consequence they require many attentional resources to be performed.

4.4. Implication for future research and practice

Now, taking in account the fundamental assumptions of the operational readiness theory and its predictions (as you will see as follow both have received a good experimental suport) we are ready to responde to some fundamental questions concerning hypnotic phenomena:

(1) Which are the fundamental factors and mechanisms of hypnotic phenomena? Specific suggestion and activated mental sets are the necessary and sufficient condition for generating hypnotic phenomena (David, Musca & Vanga, in press).

(2) How could one get the activated mental sets that generate hypnotic phenomena? The activated mental sets to generate hypnotic phenomena can be produced:

a) by reducing the executive ego constraints; it supposes positive attitudes and motivation toward hypnotic responses and it will generate a large operational readiness (David, 1996; Hilgard, 1965; 1992);
b) by reducing the enviroment constraints; it supposes a hypnotic induction procedure or other procedures and it will generate a large operational readiness (David, 1996);
c) activating mental sets by various instruction (e.g. imaginal a certain enviroment that primes mental set desired) , repeted suggestion or by previous implemented intention (e.g. "under hypnosis at a moment I will require you…" or formalized "When X occurs, I`ll execute Y"). This is done upon a large operational readiness that will not interfere with the process of the activation so that one does not require many attentional resources to activate the mental set (David, 1996).

(3) Is the motivational task as efficient as hypnosis in generating hypnotic phenomena? It could be if by motivational task one can manipulate the necessary factors of hypnosis (Barber, 1969). Our results (David, Musca & Vanga, in press) suggested that it happened only in the case of subjects with high imaginative ability because only they could reduce the enviromental constraints (despite of not using hypnotic induction procedure) by becoming absorbed in suggested imagines.

(4) Is hypnotic susceptibility modificable?

Certainly yes (Gorassini & Spanos, 1986). Manipulating the factors and the mechanisms of hypnotic phenomena in fact we modify hypnotic responsiveness. Our DC-Carleton Skill Training Program (David, preparing) is very succesful in the modification of the hypnotic susceptibility of low and medium subjects in high hypnotic susceptibility; this is done taking in account the mechanisms described in our hypnosis operational readiness theory.

(5) Hypnotherapy; what is it and what can be done wiyh it?

Hypnotherapy refers to the utilization of the hypnosis in clinical practice or in stimulating the performance of healthy people. Hypnosis is a technique that generates specific subjective, cognitive, behavioral and psychological responses (David, 1997).

Subjective modification refer to "I feel like statement". Subjects describe their subjective state as "A trance like state"; "A focused attention state"; "An absorbtion or dissociation state" etc. Anyway the core of subjective modification in hypnosis that inglobates the mentioned statements is the automaticity. Indeed the experience of suggestion - related involuntariness- has come to be so closely related to hypnosis that it is viewed as the acid test of weather a response is genuinly hypnotic or a sham.

Subjective modifications are seen in cognitive psychology as dependent variable of cognitive, behavioral and physiological interactions. As low subjective experience of automaticity under hypnosis could be explained by cognitive, behavioral and physiological factor which was presented in above operational readiness theory. What is important to see is what is the practical impact of this subjective state in clinical practice of hypnosis. We assume that hypnosis by its subjective state generates a new life experience for our pacient. This in turn could: (1) increase pacient self-confidence and self-esteem: (2) increase the quality of therapist/pacient relationship; (3) be a prerequisite for changes in psychotherapy.

Cognitive modifications refer to modifications at:

(1) perceptual system as positive or negative hypnotic hallucinations, hypnotic illusions etc.

(2) memory system as hypnotic amnesia, hypermnesia or age regression.

(3) thinking see trance logic

(4) language

(5) imagination see hypnotic dream.

Hypermnesia, age regression or hypnotic dream could be used for memories recover. This memories in turn put in an interpretation, offer a choerent history of life and a choerent explanation of the symtomatology reducing the simtomatology no matter if the memories are true or false memories. It is Ok as long as the pacient considers them to be real memories related with his actual symtoms. Hypnotic amnesia could be used in crisis for covering trauma experiences for short time until we elaborate a more adequate intervention procedure. Hypnotic hallucination are used in pain reduction.

Behavior modification refers to all behaviors enacted under hypnosis and of course experienced as involuntary. This in turn increases self-confidence of the pacient in successful results at the post-hypnotic suggestions, eliminating performance anxiety in echological conditions.

Physiological modifications suppose either a relaxation state or an alert one. They can be used in sistematic desensitization, stress-inoculation training, either as a technique or as a hypnotic emotion/mood induction technique.

More than that hypnosis combined with other techniques (as cognitive-behavioral or dynamic) could enhance their efectiveness.

In cognitive therapy for example would be easier to implement a new adaptive thought on a larger operational readiness under hypnosis than in a weake state because the interference of past knowledge with the new one will be reduced. A new behavior before its implementation in vivo could be repeated under hypnosis increasing the confidence of the subject in the posibility of doing the behavior in echological conditions. Sistematic desensitization under hypnosis might generate more vivid images because of lower interference with the enviroment and other activated knowledge.

5. GENERAL DISSCUTIONS

Kuhn (1976) insisted that the real work of science begins once a community of scientists has adopted a paradigm. Researchers in the field of hypnosis are still devided about wich paradigm to adopte, wich theory provides the most accurate, consistent and productive explanation of the mechanism of hypnotic phenomena.

This article were designed primarly to present a theory of hypnosis, theory built upon the fundamental assumtions and fundamental research of experimental cognitive psychology. Our operational readiness theory assumes that hypnosis is a technique in wich by hypnotic induction procedure one creates a large operational readiness reducing the constraints of the enviroment and the executive ego on our information processing. Then by various instructions like repeted suggestions one activates certain mental sets that subsequently will generate in conjunction with a specific suggestion an involuntary response at subjective, cognitive, behavioral and physiological level.

So far some of the fundamental assumptions of operational readiness theory have received good experimental support but a lot of work must be done in future for more detailed analysis of the theory and its predictions.

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CAUSAL RELATEDNESS AND TEXT COMPREHENSION

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ABSTRACT. As the reader proceeds through the text, he or she attempts to maintain (1) causal coherence between the focal event (consequent) and antecedents, and (2) sufficient explanation for the encountered events. Because of this reason he will access activated information (van den Broeck, 1990). If the activated information provide sufficient explanation then a connection inferences made and inference processes stopping. If no sufficiency is likely emerge in further inferential activities such reinstatement of prior events. In experiment 1 we systematically manipulated the extent to which various parts of the texts provide sufficient inferential information for a focal event. Using a factorial experimental design we varied the strength of causal relationship between antecedent and consequent (sufficiency/ insufficiency) and word target type. We assumed that response to a test word reflects the state of availability of the concept being tested. The results of lexical decision test following the focal event provide evidence than the sufficiency condition. In experiment 2, we tested if there are differences between low reading span and high reading span subjects in answers to priming task (implicit memory task). The results show that there no differences between the two categories of readers in this task.

In experiment 3, we used an explicit memory test. The hypothesis is there is a deficit in reactivated information from long term memory in low reading span subjects due to a lack of efficient inhibitory mechanisms; the deficit is not predicted in the implicit memory task.

For the memory representation of narrative texts, the generation of causal relations is a major component of the inferential activities during reading. Ideas which were not included in a message but which are captured by the internal representation of the message are called inferences (Singer, 1994). A second definition asserts that an inference represents encoded non-explicit features of the meaning of the text. (Mc Koon & Ratcliff, 1989). One important inference distinction is that between the encoding of an implied idea and the transient activation of the idea that might accompany comprehension. Pertinent to this distinction is the finding that the words of the massage activate their close associates, regardless of the relevance of those associates to the current context (Kintsch & Mross , 1985). That is, the appearance of *bug* in the spying context activates concept ANT. In spite of this, it seems infelicitous at best to suggest that the reader has drawn an inference about an insect. In this regard, it is conceivable that a word such as nail in a message may activate is close associate, HAMMER, without hammer being permanently encoded in the message representation.

As a reader focuses on a new statement, he may generate two types of causal inferences. They may be backward, connecting the event to its antecedent, or they may be forward, anticipating future consequences of the focal statement.

Backward causal connections provide coherence between the focal statement and antecedent statements. The reader can draw on three sources and the three resulting types of backward inferences. As the reader proceeds to a new focal event, information that was activated during processing of prior events may provide the causal antecedent for the new event. In this case a simple *connecting inference* establishes a connection between two. A connecting inference is generated when the reader identifies a causal relation between the focal event and information that has remained activated after processing of the prior event, or when a focal statement and one of its antecedents co-occur in short term memory. This hypothesis was tested by Myers et al. (1987). They reasoned that if readers indeed attempt to identify causal relations between adjacent sentences, than the stronger a relation is, the more easily readers would identify it. Subjects read sentence pairs that varied systematically in their causal strengths. The reading time showed that the stronger the causal relation, the more quickly subjects read the second statement.

In stories, because they contain more than sentences, information other than the immediately preceding statement still may be activated when the focal event is encountered. Duffy (1986) showed that information that is unexplained is often maintained as the reader proceeds through the text. The same statements that are explained but have no consequences are maintained in memory.

Second, the reader in order to identify causal antecedent and to provide missing causal support can reactivate information from the prior text that currently is not highly activated. That is, *a reinstatement* is made to connect the focal event to prior text. The evidence that causal reinstatements indeed occur during reading and that the resulting causal relations are generated and encoded in the memory representation of the text. Causal connections that are generated via reinstatements are incorporated in the memory representation of the text. (van den Broek, 1994). Readers frequently reinstate information from the prior text in order to create causal connections to the focal event. They seem to do so when reinstatements are required in order to provide adequate causal justification for the focal event. Little research has been conducted on the exact mechanism by which the reinstatement search takes place.

Third, the reader can draw on backward knowledge in order to identify a plausible but unmentioned antecedent to the focal event. In this case the reader makes an *elaborate inference* to provide an explanation for the focal event. (Kintsch & van Dijk, 1978; van den Broek, 1994).

Required inferences

The required inferences are those that provide causally sufficient explanation for the focal event. A cause is sufficient for an event if in general the cause by itself would likely result in the event. The extent to which an event is understood strongly influences the inferential process. As the reader proceeds through the text he attempts to maintain sufficient explanation for the encountered

events. In this way he will access activated information, background knowledge and/or memory for prior text when needed to do so. (van den Broek, 1994).

As the reader begins processing a novel focal event he attempts to connect the focal event to the events that are already in the focus of attention or short term memory. This activated information is likely to include the immediately preceding statement. But it may include statements that still require explanation.

If the activated information provides sufficient explanation than a connecting inference is made and the inferential process stops, without having accessed background knowledge and without reinstatement information from the prior text. If no sufficiency is established, however, than the reader is likely to engage in further inferential activities, such as reinstatement of prior events. The resulting inferences will tend to provide sufficiency. The sufficiency dictates when various types of inferences occur and what their content will be. (van den Broek, 1994).

The focus of this study is to investigate 1) Mechanisms of backward causal inferences that are made on-line and off-line after reading a text. For this reason, we used both implicit and explicit memory tasks. 2) The differences between high and low reading span subjects in responding to implicit and explicit memory tasks.

Memory representation of a text is the result of inferential processes that take place during reading. These inferential processes allow the reader to establish coherence as he proceeds through the text. In general the more relations a reader detects, the more coherence the text representation is, and the better comprehension will be. (van den Broek, 1994).

We underlie two categories of inferences: automatic and strategic. The first inferences are beyond conscious control and therefore inevitable. In contrast strategic inferences are the result of intentional efforts of the reader. We tested the both types of inferences.

In ***experiment 1*** we manipulated the extent to which antecedent provide sufficient inferential information for a focal event. We used an ANOVA 2 x 2 varying the strength of causal relationship between antecedent and consequent and word target type (related / unrelated with focal event). We assumed that response to a test word reflects the state of availability of the concept being tested.

Hypothesis. Lexical decision time is quicker in insufficient condition of causal relationship between antecedent and consequent than in sufficient condition.

Participants. Thirty - two students at the Babeş-Bolyai University, 10 men and 22 women aged between 19 and 25.

Materials. We used ***ten*** experimental narrative passages. Each passage can be viewed as consisting five sections: 1. Introduction 2. premise 3. Intermediate sentences 4. Antecedent 5. Consequent. The introduction consisted in two lines introducing the protagonist. Premise and intermediate sentences then followed this. The introduction, the premise, the intermediate sentences and the consequent were the same for which version. There were two versions of each passage different with respect to the relationship antecedent - consequent. The relationship antecedent- consequent was insufficient when the

antecedent event was causally connected to the focal event and this connection does not provide sufficiency because usually "to put the book on the table" does not cause object to become wet. Relationship was sufficient when antecedent event provided sufficient explanation for the focal event. Other sections were identical in the two versions. The second variable manipulated was the word task. We used a lexical decision task in two variants: the word task was taken from premise and it was related with focal event (ex. "rain"), or the word task was taken from premise and it was unrelated with the focal events (ex. "outside").

Design and Procedure: For each subject the experimental passages were randomly assigned to the form condition with two constraints: The strength of relationship and the target type. The target word decision was presented after each passage. Subjects were tested individually. The order of presentation was the same for all subjects. The passages were presented on a video monitor. The subjects were instructed to read every passage for comprehension at there on pace. Each trial began with a fixation point presented at the center of the monitor. A line advance key controlled the presentation of the text. Each key press caused the current line to be erased and the next line to be presented. After the last line of the passage was presented it followed a signal. Subjects were instructed to indicate whether the visual string of letters following after a signal formed a word or a non-word by pressing an appropriately labeled response key. On the half of the trials was presented a visually comprehension question for motivating the subjects to read attentively. Subjects were given three practice trials before beginning the experiment.

Table 1. Mean Lexical Decision Time (ms) for Target as function of Relationship Strength Antecedent- Consequent and Target Type

Relationship Strength Antecedent-Consequent	Target Type	
	Related (1)	Unrelated (2)
Insufficient	777	806
Correct (%)	96	98
Sufficient	796	811
Correct (%)	98	98

Results and Discussion:

Table 1 shows the mean of reaction time for both target in sufficient / insufficient condition. Inspection of the data reveals comparable differences in responding to the strength relationship antecedent - consequent, for word related target condition $F(1,15) = 6,05$ ($p = .05$), but not significantly differences for word unrelated target condition $F(1,15) < 2$. These results demonstrate that when there is a fail for establish sufficient causal justification for the focal statement intervened two inferential mechanisms: 1) The first is referred to spread of activation based on

the constrains provided by the text. Thus insufficient cause for focal event may trigger activation of other concepts (Just & Carpenter, 1992). According to the Building Framework, memory nodes are activated by incoming stimuli. Once activated, memory nodes transmit processing signals, which either enhance or suppress other nodes' activation. Thus, once memory nodes are activated, two mechanisms control their level of activation. These mechanisms are suppression and enhancement.

2) The second mechanism concerns the establishment of coherence in the text. If an inference is required in order to attain coherence, than it is likely to be made. The lack of coherence evokes additional coherence - based processes. Search results in reactivated and accessed prior text, in our case, information from premise, which is related with information of focal event is reactivated in insufficient explanation causal relationship antecedent- consequent condition.

In experiment 2 we have tested whether low and high reading span subjects differ in the extent to which they generate inferences during reading a text and in the extent to which they answer to lexical decision tasks (implicit memory task). The subjects were divided in high and low reading span using Daneman's and Carpenter test (1980).

Subjects. Forty -eight students at the Babeş-Bolyai University, 18 men and 30 women aged between 19 and 25.

Reading span test. Subjects had to read a series of sentences aloud at their own pace and recall the last word of each sentence. The test was constructed 60 unrelated sentences, 12 to 15 in length. Each sentence ended in a different word. Each sentence was typed on a single line across the center of an index card. The cards were arranged in three sets each of two, three, four, five and six sentences. Blank cards were inserted to mark the beginning and end of each set. The experimentator showed one card at a time to the subject. The subject was required to read the sentence aloud. As soon as the sentence was read it was placed on top of the first and the subject read the new sentence. The procedure was repeated until a blank card signaled that a trial had ended and that he was to recall the last word of each of the sentences in the order in which they had occurred. They were warned to expect the number of sentences per set to increase during the course of the test. The span test contained three sets each of two, three, four, five and six sentences. Subjects were presented increasingly longer sets of sentences until they failed all three sets was taken as a measure of the subject' s reading span. No subjects correctly recalled any set of card at a higher level than their defined spans.

We selected 13 smaller span subjects with span size two and three (low reading span subjects) and 16 subjects with span size five and six (high reading span subjects).

Table 2. Mean Lexical Decision Time (ms) for Target as function of Relationship Strength Antecedent- Consequent and Reading Span

Reading Span	Relationship Strength Antecedent-Consequent	
	Insufficient	Sufficient
Low Span	771	784
High Span	766	776

We used an ANOVA 2 x 2 and variables were: 1) the strength of relationship antecedent -consequent (sufficient / insufficient) and 2) the category of subjects (low reading span subjects / high reading span subjects). The target word decision was presented 100 ms immediately after subjects finished reading each passage. We predicted that at the immediate test point, both the more- and less skilled reading span subjects would take the same time with respect to priming task. The results show that there are no differences between the two categories of readers with respect to priming task. The analysis do not revealed a significant effect of skill F (1, 28) = 2,34, p >. 05 (Table 2). Both skilled and less skilled readers executed a process (to respond a word decision task) that required representing in an automatic way the meaning of the text. High reading span subjects responded somewhat, faster than did low reading span subjects to the target words, but the differences are not significance.

In ***experiment 3*** we used the same materials like in prior experiment (the versions were the relationship antecedent- consequent was insufficient) and an explicit memory task: completion of some statements like: "The book was wet because..."The answers to this statements require to reactivate information from premise. The hypothesis is that there is a deficit in reinstatement information of the prior text in low reading span subjects but not in high reading span subjects. The result show that there are differences between the two categories of subjects with respect to explicit memory task, $X_2 = 2.74$, $p < .01$ (table3).

Table 3. Percentage Correct Reactivation of Premise as a function of Reading Span for Insufficient Condition

Reading Span	***Insufficient***
Low Reading Span	.71
High Reading Span	.92

The mechanism that could contribute to reduction the effective capacity of memory was maintenance activated of irrelevant information. This fact is due to a lack of efficient inhibitory mechanisms. These activities would effectively reduce the resources for more relevant processing. Evidence for a lack of inhibition is most convicting in studies that show systematic intrusions and interference's from inappropriate associations in output responses (Dempster, 1992). The inhibition hypothesis is closely related to the concept of cognitive resource allocation. In this

view the deficit arises because of inappropriate information that is maintained rather than forgotten or actively suppressed. Inhibition is highly related to the issue of total capacity as well as efficiency (Carpenter, 1994). The inhibition hypothesis refers to the recruitment of inappropriate information, or provides more opportunity for irrelevant associations.

Conclusions:

1. There are differences in processing different types of inferences which are automatic generated during reading a text, (on line), as a function of sufficiency between antecedent and consequent.
2. There are no differences in generating automatic inferences between high and low reading span subjects in responding to implicit memory task but there are differences in making strategic inferences in responding to explicit memory task.

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Appendix

First version

1. Introduction: Tom came from school.
2. Premise: Outside it is raining.
3. Intermediate sentences: He went into a room.
4. Antecedent: He put a book on a table.
5. Consequent: The book was wet.

Second version

1. Introduction: Tom came from school.
2. Premise: Outside it is raining.
3. Intermediate sentences: He went into a room.
4. Antecedent: He put book on a table.
5. Consequent: The book was wet.

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THE PROBLEM OF FICTIONAL DISCOURSE IN VIRGINIA WOOLF'S ORLANDO

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ABSTRACT. It is well known that one may often find it hard to tell whether a particular text is fictional or not. Virginia Woolf's novel, Orlando: A Biography, is a good example, in this respect, as its title suggests that this work is given as a real biography. The reader is guided along this path by the so frequently stated concern of the biographer about the truth of his statements. This is a deceptive strategy meant to capture the interest of the reader by creating a kind of ambiguity. At the beginning of the novel, the way in which the text is framed encourages one kind of reading and thus makes it difficult for the readers to discover that they are not offered a real biography, but rather the representation of a possible one. What the readers took for reality turns out to be fictive when, later in the novel, the fictional intent can be inferred. For a discourse to be fiction it has to be intensional and intentionally so. It could be argued that the title exposes from the start the factual intent and dismisses the fictional one. However, this turns out to be only a trap which lures the readers into incorrect assumptions. Therefore, in conferring the status of fiction or non-fiction to a literary work, one should proceed carefully and avoid jumping to conclusions because, when it comes to such ambivalent writings, judgment about them is difficult to make.

1. Introduction

The categories literary and fictional have very often raised controversies among literary theorists. Sets of oppositions like literary-nonliterary, fictional-nonfictional have shaped the development of many literary theories up to this moment. Although it has been established that the two features - literary and fictional - are distinct and do not presuppose each other, the problem of fictionality is still uncertain.

Representatives of reader-response criticism have given the reader the main role in conferring the status of fiction to a literary work. This theory allows for some discourse that was fictional to become nonfiction, as well as for a discourse that was not meant to be fictional to become fiction.

To this it has been answered that fictionality is not a matter of the reader's actualization or reactualization of it because it already exists. Therefore, the scholars have pointed out that the distinction between "being fiction" and "being

regarded as fiction"[1] must be made, due to the intrinsic nature of fictionality. Fictionality is not only a pragmatic feature, but also a feature assigned to the text at the time of its making. The intention of the author is fundamental for fictional discourse - fictionality is built into the discourse and remains there unchanged.

However, if we consider the intention of the producer as basic for fictional discourse, a title like *Orlando: A Biography*, given by Virginia Woolf to the novel she wrote in 1928, might be misleading. Did the author intend to write a genuine biography to be taken as such by the reader? Considering that biographies can be characterized by literariness but not by fictionality, the question would be the following: is *Orlando* fiction or nonfiction?

2. Definitions of fictionality

The two main tendencies in the study of fictional discourse are the non-communicative theory and the communicative theories.

The poetic theory - a non-communicative theory, is represented by Ann Banfield and S.-Y. Kuroda. Banfield objects to the use of the term "discourse" because she considers that fictional narrative lacks both the communicative and the expressive function. As Ştefan Oltean has pointed out (1996: 21), the poetic theory maintains that fictionality has an intrinsic, intensional nature and is not determined by external factors like communicative intent, the attitude of the listeners, or other factors involved in literary narrative communication.

In spite of the postulated lack of communicative function, in *Orlando* we might notice that a communicative attempt does exist:

> "It was Orlando's fault perhaps; yet, after all, are we to blame Orlando?" (*Orlando*, p.17)
>
> "Our simple duty is to state the facts as far as they are known, and so let the reader make of them what he may." (*Orlando,* p. 41)
>
> "For though these are not matters on which a biographer can profitably enlarge it is plain enough to those who have done a reader's part in making up from bare hints dropped here and there the whole boundary and circumference of a living person; [...] - and it is for readers such as these that we write -" (*Orlando*, p. 46).

Among the communicative theories one can distinguish a pragmatic theory, an approach to fiction from the perspective of the theory of speech acts[2] and, finally, a direction which combines the communicative and non-communicative theories in a more adequate one.

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[1] John Searle was the first to make this distinction in his article "The Logical Status of Fictional Discourse" in *New Literary History*, 6/1975: 319-332.

[2] J.L. Austin set the basis of the Theory of Speech Acts with a series of fifteen lectures held at Harvard University. He published in 1960 his work *How to Do Things with Words*, Cambridge, Massachusetts: Harvard University Press. The theory was developed by John Searle - *Speech Acts. An Essay in the Philosophy of Language*, 1969, Cambridge: Cambridge University Press. Fictional theories based on the Theory of Speech Acts have been proposed by Richard Gale (1972), John Searle (1975) and Gottfried Gabriel (1979).

a) The theory stressing the importance of the pragmatic dimension, represented by Siegfried J. Schmidt, attempts to explain fictionality through the existence of a set of conventions. These pragmatic conventions function as a contract that governs a certain cultural context, a contract stating that the truth conventions of nonfictional discourse are, in a way, suspended.

Gary Saul Morson (1981: 44) considers that "To take a text as fictional is to recognize it as the *representation* of a *possible* utterance, not as the enunciation or inscription of a real one". Morson illustrates this (1981: 44) by quoting Barbara Herrnstein Smith:

> "What is central to the concept of the poem as a fictive utterance is not that the «character» or «persona» is distinct from the poet, or that the audience purportedly addressed, the emotions expressed, and the events alluded to are fictional, but that *the speaking, addressing, expressing, and alluding are themselves fictive verbal acts*... The essential fictiveness of novels... is not to be discovered in the unreality of the characters, objects, and events alluded to, but in the unreality of the *alludings* themselves. In other words, in a novel or tale, it is the act of reporting events, the *act* of describing persons and referring to places that is fictive..." (emphasis author's).

The terms of this contract specify that the readers should not hold the authors responsible for their utterances, as they do in the case of nonfictional statements, because

> "fictive utterances are not being said but rather represented [...] We *do* hold them responsible for the act of *representing* certain statements, which is quite a different thing. The authors do not vouch for the veracity of their fictive statements because they are not in fact stating them: nor do we expect them to fulfill fictive promises or be sorry when they represent a possible apology" (Morson, 1981: 44-45) (emphasis author's).

We can provide some examples of promises and apologies, taken from *Orlando*, that should not be taken as such in case *Orlando* is a novel, not a genuine biography:

> "The biographer is now faced with a difficulty which is better perhaps to confess than to gloss over. Up to this point in telling the story of Orlando's life, documents, both private and historical, have made it possible to fulfill the first duty of a biographer, which is to plod, without looking to right or left, in the indelible footprints of truth; unenticed by flowers; regardless of shade; on and on methodically till we fall plump into the grave and write *finis* on the tombstone above our heads" (*Orlando* p. 41).
>
> "It is, indeed, highly unfortunate, and much to be regretted that at this stage of Orlando's career, when he played a most important part in the public life of his country, we have least information to go upon. [...] Just when we thought to elucidate a secret that has puzzled historians for a hundred years, there was a hole in the manuscript

> big enough to put your finger through. We have done our best to piece out a meagre summary from the charred fragments that remain;[...]" (*Orlando* p. 75).

Recognizing this contract, considers Schmidt, sets fictional literature aside from the other communicative processes, because the pragmatic conventions assign specific characteristics to literary communication.

b) In building his account of fiction John Searle (1975: 319-332) relies on the concept of speech-acts. Searle formulates a set of rules for the speech-act of assertion (1975 : 322), presented by Marie-Laure Ryan as follows (1991: 61-62):

> "(1) The essential rule: the maker of an assertion commits himself to the truth of the expressed proposition.
> (2) The preparatory rule: the speaker must be in a position to provide evidence or reasons for the truth of the expressed proposition.
> (3) The expressed proposition must not be obviously true to both the speaker and the hearer in the context of utterance.
> (4) The sincerity rule: the speaker commits himself to a belief in the truth of the expressed proposition."

These rules stop being in force when an assertion occurs in a novel[3] .In creating the fictional discourse, the author is "pretending to make an assertion, or going through the motions of making an assertion, or imitating the making of an assertion" (Searle 1975: 324), and thus engages in a "non-deceptive pseudo-performance of illocutionary acts" (Searle 1975: 325).

Searle considers that an author can either speak of imaginary entities and *pretend* to refer to them, or speak about real entities, in which case he or she *does* refer[4].

According to Searle's theory we could say that, like most fictional stories, *Orlando* contains nonfictional elements as well as fictional ones.

Along with the "pretended references" to the Muscovite princess Sasha, the dancer Rosina Pepita or the sailor Marmaduke Bonthrop Shelmerdine, there are in Virginia Woolf's story "real references" to the Thames, St. Paul's Cathedral, London Bridge, Queen Elizabeth I, King James, King Charles II, Queen Anne, Queen Victoria, Alexander Pope, Joseph Addison, Jonathan Swift and many others[5].

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[3] Thomas Pavel considers the rules governing the speech act of assertion as "exorbitantly severe" (1986: 20):
"In order to follow the sincerity rule scrupulously, a speaker has to be transparent to himself with respect to his beliefs.[...] But the picture we get from actual situations indicates that we more or less believe a limited number of propositions, without knowing whether we believe their consequences or not, and for a large number of propositions we simply do not know, in any serious sense of the word, whether we believe them to be true or not".

[4] Marie-Laure Ryan objects to Searle's "accepting nonpretended speech acts into a discourse framed as fiction" (1991: 64).

[5] See also pp. 6–8.

c) As Oltean has pointed out, the nature of fictionality cannot be accounted for unless one takes into account the pragmatic convention as well as the intention of the producer and the structural features - syntactic and semantic - of the text. One should therefore consider both the contextual and the textual factors (1996: 25). Accordingly, for a discourse to be fiction it needs to be intensional and intentionally so.

The definition of fictional discourse is thus based on two main aspects: intentionality and intensionality

3. The intentional aspect. Fictional intent and "make-believe"

There is a crucial difference between nonfictional and fictional discourse, a difference that lies in the kind of responsibility the author takes for his or her statements.

In the first case the author pretends to be telling the truth and assumes responsibility for what he or she says, while in the case of fictional discourse the writer is not responsible for the truth value of the text.

Gregory Currie (1990) considers that fictional discourse is dependent upon the reader's attitude towards the author's discourse - an attitude of "make-believe". The "make-believe" aspect is the main aspect of intentionality: the author produces a discourse that he knows is not true and thus intends it to be fiction. But the reader is expected to read it as if it were true, that is to adopt a "make-believe" attitude towards the discourse. From this involvement comes the entire emotional attraction of the reader to fiction.

In the *Postscripts* to his article *Truth in Fiction* (1983: 276), David Lewis describes the "make-believe" aspect as follows:

> "The storyteller purports - normally, if not invariably - to be telling the truth about matters whereof he has knowledge. I take the actual telling of the story, in effect, as part of the story itself; or in other words, I subsume the pretended truth of the story under the pretence of truthful telling".

Lewis (1983: 276) observes that

> "the storyteller's pretence of truth and knowledge is only the tip of the iceberg. There is a cooperative game of make-believe, governed by conventional understandings, with players in (at least) two roles. The storytellers pretend to pass on historical information to their audience; the audience pretends to learn from their words, and to respond accordingly.[...] The audience may make-believedly learn their history from several different storytellers. They make-believedly do what real students of history really do: they combine information from several sources"

4. Fictional intent in Orlando

As Oltean has pointed out (1996: 26), the "make-believe" aspect brings us back to the intention of the producer - the fictional intent, which determines the structure of the fictional game and is responsible for the intensional nature of fictional discourse.

Even though in *Orlando* fictional intent is not clearly stated and seems to be out of the question from the start due to the very title of the book - *Orlando: A Biography*, the fact that the gender of the author - feminine - is different from the gender of the "biographer" - masculine - casts at least a shadow of doubt on the nonfictional status of this work:

> "Happy the mother who bears, happier still the biographer who records the life of such a one! Never need she vex herself, nor he invoke the help of novelist or poet" (*Orlando*, p.10).

As nonfictional discourse, biography presupposes the identity actual sender = implied speaker. In *Orlando*, however, the difference of gender between the sender and the implied speaker leads us to the conclusion that they are not the same person, that the implied speaker is here a narrator and *Orlando* is not a genuine biography but a novel.

In *Orlando* the narrator pretends to be telling the truth about events he has knowledge of:

> "So far, we are on the firm, if rather narrow, ground of ascertained truth" (*Orlando* p. 82).
>
> "Would that we might here take the pen and write Finis to our work! Would that we might spare the reader what is to come and say to him in so many words, Orlando died and was buried. But here, alas, Truth, Candour, and Honesty, the austere *Gods* who keep watch and ward by the inkpot of the biographer, cry No! Putting their silver trumpets to their lips they demand in one blast, Truth! And again they cry Truth! and sounding yet a third time in concert they peal forth, The Truth and nothing but the Truth!" (*Orlando*, p. 84).

The narrator seems really concerned about the veracity of the events he describes:

> "To give a truthful account of London society at that or indeed at any other time, is beyond the powers of the biographer or the historian. Only those who have little need of the truth, and no respect for it - the poets and the novelists - can be trusted to do it, for this is one of the cases where the truth does not exist.[...] Following the example of our predecessors, therefore, we will only say that society in the reign of Queen Anne was of unparalleled brilliance" (*Orlando*, pp. 120-121).

The narrator asserts the futility of searching the help of fictional devices:

> "Happy the mother who bears, happier still the biographer who records the life of such a one! Never need she vex herself, nor he invoke the help of novelist or poet" (*Orlando,* p.10).

He pretends to disregard novelists and poets, and even alludes to the documents he has studied in order to ensure that the information he provides us with is reliable:

> "Up to this point in telling the story of Orlando's life, documents, both private and historical, have made it possible to fulfill the first duty of a biographer, which is to plod, without looking to right or left, in the indelible footprints of truth;[...]" (*Orlando*, p. 41).
>
> "It is, indeed, highly unfortunate, and much to be regretted that at this stage of Orlando's career,[...] we have the least information to go upon" (*Orlando,* p. 75).
>
> "From the Gazette of the time we gather that..." (*Orlando,* p. 81).

But the mentioning of documents, the insistence upon truth and the fact that many of the characters'names in *Orlando* have as referents real-life persons in flesh and blood, historical figures - Pope, Addison, Swift, Elizabeth I, Charles II, Queen Anne, Queen Victoria, King James etc. - does not mean annihilating the "make-believe" pretence. Tolstoy (quoted in Morson 1981: 45) also stated, when describing the sections of *War and Peace* that deal with real historical figures:

> "Whenever in my novel historical persons speak or act, I have invented nothing, but have used historical material of which I have accumulated a whole library during my work. I do not think it necessary to cite the titles of those books here, but I could cite them at any time in proof of what I say"

Nevertheless, as Morson specifies (198 : 45) "Despite this claim of extraordinary scrupulousness, however, Tolstoy does not seem to be setting aside the fictional contract".

> In writing her book, Virginia Woolf has also studied lots of documents, as the preface to *Orlando* clearly shows: she has gathered information on the law of real property, Elizabethan music, art and painting and, none the less, history. But, as Morson has pointed out (1981: 45) in his analysis of *War and Peace*, there are in the novel "conversations between historical and fictional characters for which [s]he could not have had, and for which it is therefore unlikely that [s]he expected us to believe [s]he had, documentary evidence... [s]he was, in short, not claiming in these passages to be making real utterances about historical figures, but rather to be depicting possible ones which, if they *had been* made in a nonfictional history, *would have been* more or less accurate" (emphasis author's).

As a proof, there are times when imagination is admitted to have been used:

> "It is with fragments such as these that we must do our best to make up a picture of Orlando's life and character at this time" (*Orlando*, p. 78).
>
> "We have done our best to piece out a meagre summary from the charred fragments that remain; but often it has been necessary to speculate, to surmise, and even to use the imagination" (*Orlando*, p. 75).

Indeed, in Virginia Woolf's novel, we can find known geographical sites, historical figures, real events, as well as invented characters, places and happenings. But, as Paul Ricoeur has stated in his work *Time and Narrative*, volume 3 (1988: 129):

> "we would be sorely mistaken if we were to conclude that these dated or datable events draw the time of fiction into the gravitational field of historical time. What occurs is just the opposite. From the mere fact that the narrator and the leading characters are fictional, all references to real historical events are divested of their function of standing for the historical past and are set on a par with the unreal status of the other events".

Therefore, we cannot accept Searle's idea of admitting nonpretended speech acts in fictional discourse, because

> "the reference to the past, and the very function of standing-for are preserved but in a neutralized mode[...]. All the specific connectors set in place by history can also be neutralized and simply mentioned: not only calendar time but the succession of generations, archives, documents and traces. The entire range of tools serving the relation of standing-for can be fictionalized in this way and considered as the work of the imaginary" (Ricoeur 1988: 129).

In fact, Ricoeur has pointed out (1988: 157) that we should stop dealing with the problem of reference in traditional terms. He has started his demonstration by revealing the possible discrepancies between *events*, *representation* and *discourse about the events*, due to the fact that discourse is a configuration that does not match exactly the configuration of the events in the actual world (1988: 157) Although narrating something, the way the narrator does in *Orlando*, means telling it as if it were past,

> "the events recounted in a fictional narrative are past facts for the narrative voice, which we can consider here to be identical with the implied author; that is with a fictive disguise of the real author. A voice speaks, recounting what for it has taken place. To enter into reading is to include in the pact between the reader and the author the belief that the events reported by the narrative voice belong to the past of that voice" (Ricoeur 1988: 190).

Therefore, Ricoeur (1988: 157) concludes that only the works of historians refer to real facts, "observable to witnesses in the past", while there can be no "real references" in fiction because "Between the «reality of the past» and the «unreality of fiction», the dissymmetry is total".

5. The referential aspect. Intensionality and the referential question

The problem of reference is a debated issue in Semantics. Some scholars considered that linguistic expressions refer by specifying the properties of the things in question, that is by using a "cluster of descriptions", but they finally concluded that there is something more to the meaning of linguistic expressions than the "cluster of descriptions".

From the point of view of Referential Semantics, expressions refer to individuals - objects in the actual world, while from the point of view of the Representational Theory, expressions do not only pick up individuals but rather refer to our mental representations of different objects, as the mentalistic theorists assert.

Ştefan Oltean (1996: 30-32) synthesizes the different approaches to the referential question.

Starting with Gottlob Frege (1960 [1892]), one of the first to approach fictional discourse from a logical perspective, and Bertrand Russell (1956 [1919]) who both consider that there is only one world and thus restricted the category of reference to the real world, Oltean points out that according to this theory fictional discourse does not refer (1996: 30).

Among the representatives of the theory of discourse Oltean mentions Robert de Beaugrande (1984), Gillian Brown and George Yule (1983), who maintain that the referential function is actualized only in discourse, as isolated lexical elements have no reference, only sense/intension and denotation/extension. Oltean also presents the constructivist direction represented by van Dijk and Walter Kintsch (1983) who assert that discourse does not render the event but a mental representation of it which implies - besides the various cognitive processes - a constructive process, and can cause discrepancies between the real state of facts and its representation in discourse (1996: 31).

As Oltean has pointed out, Ricoeur's position, even though it was elaborated independently from the various theories of the discourse, has something in common with the constructivist direction, as he considers also that narrative discourse - be it literary or nonliterary, is nonreferential, as a consequence of the imaginary configuration produced by the text (1996: 31).

Ricoeur, who has stated in his first volume of *Time and Narrative* (1984) that the configuration created by fiction *does refer*, even if not directly but metaphorically, resents this opinion in his third volume (1988) where he points out that due to the possible discrepancies between event, representation and discourse, fiction *does not refer*:

> "... the problematic of refiguration must free itself, once and for all, from the vocabulary of reference" (1988: 158).

A similar opinion is expressed by Ryan (1991: 29):

> "While the old proposal regards reference as synonymous with extension, the new proposal regards reference as an act. Reference is now *conceived in intensional terms*, as the gesture of selecting a world and making propositional acts about this world".

Basically, fictional discourse is not referential, but we can deal with its reference in terms of intensionality.

As different from factual discourse, shows Oltean (1996: 27), fictional discourse is assigned truth values not in the actual world, but in imaginary frames of reference; therefore, the nature of fictional discourse in intensional (1996: 28).

Because they send to different frames of reference than the actual world, fictional statements lack empirical reference. But, as Oltean has pointed out (1996: 48-49), this does not signify that all statements in a fictional text are untrue - fictional works, like the realistic novel or the historical novel, contain empirical references to real places, persons, historical figures. However, as long as there are invented characters, places, events, and therefore fictional statements, in the text, the discourse is fictional[6]. Although we cannot say of the statements made in *Orlando* about known places and events, or about real historical figures that their propositional implications cannot be inferred in the same way as they could from a verbally identical nonfictional text, due to the presence of invented characters - Princess Sasha, Rosina Pepita, Marmaduke Bonthrop Shelmerdine and even Orlando himself/herself[7], - *Orlando* is not a factual discourse, which means that it is not a genuine biography.

Consequently, *Orlando* is a novel - that is *fiction*.

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[6] According to Gregory Currie (1990), whose theory is mentioned by Oltean (1996: 49). Currie considers that fictionality is a question of quality, rather than a question of quantity.

[7] Orlando - who at the beginning of the novel is a young man, after spending one night with a dancer, Rosina Pepita, sleeps for one week and wakes from this trance to find that he has become a woman: "He stretched himself. He rose. He stood upright in complete nakedness before us, and while the trumpets pealed Truth! Truth! Truth! we have no choice left but to confess - he was a woman" (*Orlando*: 86).

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THE PSYCHO-PEDAGOGICAL INDIVIDUALITY OF THE STUDENT - DIDACTICAL APPROACH -

RAMONA RĂDUȚ-TACIU

ABSTRACT. The individual-student represents a certain student from the class or school, viewed as a distinct person among his peers. The individuality of his personality gathers the total amount of the psychic, behavioural and individual particularities which can be identified in concrete didactic situations. A representative number of psychological structures requires with priority the use of individualized and individualizing didactic strategies. To operate with these types of strategies means to individualize the didactic activity. The emphasis is placed upon the necessity of reconsideration of student's individuality.

The theory and the methodology of the didactic instruction has developed a specific orientation, based on the inner co-existence of two poles, which have interactive positions and roles well - statuated in binomic formula (the one who educates - the teacher and the one who is educated or/and educates himself, the pupil, student. Each of them in particular are distinct bio-psycho-social entities and also individualities situated at various levels of completion of their own personalities.

Usually, the didactic binom establishes as an algebric equation, its result representing the eficiency of the educational system, but we don't know well enough the degree of this equation. For example, using a mathematical formula:

$$T + x\ S = Ef$$

(where T = teachers, didactic personnel in general
x = the unknown
S = students
Ef = the eficiency of the didactic process)

is extremely significant, but also very difficult to establish - both in didactic planification and the development of the educational activity - to how many individuals the teachers must relate. The x symbol is valid just as a numerical/arithmetical being relevant for the number of the pupils from a school class, but irrelevant as a "psychopedagogical unknown" which would refer to the level of the development of students personality.

The extension of the formula which would suppose the introduction of the n variable (when n = the number of the students of the class):

$$T + P_{1.....n} = Ef$$

when n oscilates from 7,10 to 30-36 students, it shows that the teachers relate themselves directly to the pupils, confronting themselves in their activity with different bio-psychological or social states of the pupils; some students are approved and encouraged in their own initiatives, others are we "contest", we try to shape them in a corective and constructive way.

Anticipating the cognitive psychology and the technologies of modern didactics, A.Saint-Beuve stated in the '70's: "There is only one way to understand people well: not to hurry in judgying them, but to live near them, to let them explain and reveal themselves day by day and depict their ownself in us." (motto to Holban, I., coord. "Cunoaşterea elevului. O sinteză a metodelor", EDP, Bucureşti, 1978). What matters here is the persuasive function of interhuman communication and the realization of empathy in interpersonal communication.

From the point of view of didactics, the emphasis is placed upon the necessity of reconsideration of student's individuality in the class group where the student belongs.

The complementary processes of instruction and education reflect themselves in the personality of students, under the influence of this environment in "acts" of learning: gradually, they will produce the process of self-conducted learning. The hypostasis in which the pupil becomes both "object" and "subject" of his own formation, meets multiple variations and coincides to a best modality of realization and development of educational activity. These variations are proven by the fact that in the perimeter of the class group the pupils achieve special positions (group leader, indifferent person in the class community, marginalized pupil) - all of these noticeable by the classical aplication of a simple socio-metric test - and they will reach gradually but differently real possibilities of "didactic self instruction".

Without looking as an inappropiate name, the process of "didactic self-instruction" can be identified at the student's level with a self-conducted learning. As part of the latter, being a distinct entity from his peers, the student doesn't isolate himself; he's not considered isolated or indifferent and treated as such, but he educates himself gathering in each of his activities the features of his personality.

The same point of view accepted today by most of the teachers, requires some of the fundamental didactic concepts to be re-evaluated. Thus, the individual represents a certain pupil from his peers. *The individuality of his personality* gathers the total amount of the psychic, behavioural and individual particularities which can be identified in concrete didactic situations. That is why a representative number of psychological structures require with priority, the use of *individualized and individualizing didactic strategies*. The specific connotations to the former ones can be found in a methodological, projective and operational strategy which permits the adaptation and application of some modern didactic strategies to particular ways of learning addapted to different students of the class; moreover, the individualizing didactic strategies are those which characterize both the process of teaching and the process of learning, often being a first resultant of the teacher's activity, a mark of his didactic style or of a specific didactic situation. To

operate with these types of strategies means *to individualize the didactic activity*, and to this action there are often attached specific outcomes.

Thus, students create styles of independent intelectual work after they have organized a regime of daily activity, due to the influences of the application of the individualized and individualizing didactic strategies; but the school efficiency and the performances obtained depend mostly on the "resistance to effort", namely the characteristics of the voluntary attention, the sense of observation and even the well-balanced distribution of "school energy" on various "fields of interest of the activity" (Neacşu, I., Oproiu, E., Dragomirescu, M., "Autoinstruirea", part two, "Studiul disponibilităților cognitive instrumentale şi valorice la elevii din gimnaziu" in Revista de pedagogie, no. 4/1988, p.8-12).

The resistance to effort can be diminished as a result of the great amount information and of psycho-physiological implications specific to this stage of students' development, but also for an insuficient training in using the strategies of learning in a rational, economical way (fast and selective reading), in transfering some leading of study from one school subject to another. Self-instruction means knowing, practising and leading to perfection of some efficient strategies of learning either common or personal.

As users of differentiated didactic strategies, the teachers become preocupped with the development of some features of students personality, such as the sense of responsability, the capacity of taking initiatives, the habit of learning, the growing desire for getting informed, the necessity of comprehensing the everyday problems. These features are completed progressively with: consonant emotional states, the ability of having friends and of being friendly, the pragmatic sense, modesty relating to the others, the power of self-conducting by his aspirations and possibilities, self-control, originality.

The distribution of students' options for these qualities shows that more and more changes occur, due to the chronological and the school age advencement. For example, 4th form students (primary school) consider that human personality is built on values which belong to life in school community, between peers, friendly accepted behaviours, but also to qualities belonging to the sphere of schooling: i.e. to read, to be well informed. The presence of the pragmatic sense as a value is here rather inexistent. At the same level (9-10 years as chronological age) we also identify extensions of the educational pattern created on the basis of the teacher pedagogical authority. On the other hand, in the following school years there appears a slight drawback of the importance of accepted behaviours, the stress falling upon the capacity to work for creating something new and upon the sense of initiative - values belonging mainly to the socio-cultural horizon.

The option for different values from one age to another explanes in fact the psycho-social maturation of the pupils. The fact that the initiative, the modesty, the sociability or the sense of responsability are apreciated by pupils or University students as value marks indispensable for an integrated and full developed personality. The advancement into the school stages leads to the increase of the individual's desire to co-ordinate himself not only by his own value assimilations; he relates himself to others, though mentaining in the hierarchy of his options the

creative force of personality as well as the self-control of capacity. This is when the capacity of self-analysis and self-evaluation sets up functionally.

During the didactic process, the necessity of approaching the aspects concerning the individuality of the student appears as a consequence of the process of knowing the student as a individual. The direct and permanent contact between pupil, University student and teacher gives the latter the opportunity of building an image about each pupil of the class, an opinion more or less appropiate, real. In order this image not to remain just a rough perception of pupil's performance for the school subject tought by one teacher or another, one may appeal to psycho-pedagogical instrumentation of investigation, including:

A. *Student's individuality study sheet*
concerning:
1) Biograhical data
2) Ecological data - family members
- climate
- economical status
3) School situation - promotion index on classes
- successe or failure in school competitions
4) Personality characteristics and behaviour assessment
5) Other significant data...;

B. *Verbal behaviour study sheet*
concerning:
1) Participation during classes
- on pupil's own intiative
- on teacher's request (solicitation)
- non-participation
2) Types of verbal answers
- a. correct - b. logical - c. creative
wrong mechanical reproductive
doultful common

C. *Socio-metric tests* whose purpose is knowing different aspects of the interactive process which occur in students groups;

D. *Questionnaires* regarding the study of pupils attitude towards the class they belong to. That is why pupils should choose only one answer option to each of the following questions:

1) If you were a teacher, how would you behave with your students ?
Would you behave exactly as your actual teachers do?
a. yes
b. no
c. I don't know
2) How would you relate to the class group which you co-ordinate?

a. as to a micro-group
b. as to a group of individuals

3) Do you feel as a active member of the class community you belong?
a. yes
b. no
c. I don't know

4) How do you interact mostly with your classmates ?
a. by dialogue
b. by listening to their opinions and by taking them as true, as the letter of law
c. by struggling against most of their opinions and by justifying your own position
d. by consistently opposing in order to obtain personal status

5) Which is the learning style you follow ?
a. individual
b. in preferential microgroups
c. the whole group of student

6) Are you imposed in a microgroup at the class level ?
a. yes
b. no
c. I don't know

Which are the causes ? _____

However, students develop images about themselves, results of self-knowledge, which are not simple reflections of the external assessments. The gaps between students' opinions and the profiles created as a consequence of the investigations made by the teaching staff are a dimension of the psyche involved in the development of educational activities which influence school performances that have to be taken into account.

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RECENZII

An Introduction to Teaching. Psychological Perspectives, Ed. Charles Desforges, Blackwell: Oxford, UK and Cambridge, USA, 1995.

The book in discussion represents an excellent collection of articles on topics of pedagogy, from a psychological perspective. The editor of the volume, Charles Desforges, Professor in the School of Education and Deputy Vice Chancellor of the University of Exeter, prefaces the collection, exposing the purposes it was published. On one hand, the major objective of the didactic activity in school is to help children learn; on the other hand, a good and efficient didactic activity is "an extremely difficult job".

The main themes that structure the volume are: 1. Basic Processes, Contexts for Learning, 3. Teaching and Classroom Management, 4. Assessment and Evaluation. On approximately 350 pages, the articles dedicated to these themes intend to supply a supplementary help in the psycho-pedagogical training of the teachers.

It is important that the authors approached the instructive-educational process, the teaching-learning activity, from a psychological perspective, rather than the perspective of their own teaching experience. Obviously, the teachers and the psychology researchers share the wish to improve the instructional practice and to find new strategies that make it more efficient. The volume is intended as a guide for teachers that want to improve their activity; it focuses on teaching, learning and the psychology of these activities.

As we mentioned before, the volume approaches different aspects of the education process. It starts from the psychological concept of learning, considered in the first chapters. There are analyzed the concepts of development, learning in classroom, learning outside the classroom, direct teaching, teaching through conversation or work-groups. There are discussed problems of the effective organization of learning experience, time management, moral and social education, the implications of ethnic and personal differences. The last chapter is dedicated to the assessment of learning, and the link between teaching, learning and evaluation, themes that were profoundly discussed by Brian Dockrell from the University of Newcastle.

Having said that, we will concentrate only on certain concepts: the management of effective learning and the classroom management, which together constitute the "management of pupils learning experience".

While all managers share certain characteristics, the particularity of their management activity comes from the particular field to which it is applied. Having in mind this supposition, one can conceive the teacher as a manager whose field of activity is education. The main activity of the teacher is teaching.
The main activity of the pupils is learning. Both represent activities that circumscribe the concerns of the both. Teaching means to lead the specific activities of the pupils in the classroom, that is management of pupils learning in classroom.

The main objective of pedagogical activity in schools is to help children

learn. This is important, since it captures the essence of instruction. In order to be effective, this thing has to be clear. Most of the teachers do not understand that the aim of their activity is to help, to create a framework, a context where the pupil could learn by himself. This framework, this environment beneficial for learning, constitute the object of classroom management.

The management of pupils learning experience is a modern and pragmatic concept, analyzed in this volume. It is a global concept, including both the management of pupils learning itself and the management of the classroom, that is the management of the contexts for learning.

The art of teaching represents, in fact, the art of managing the every day experience of the pupils in classroom, in a broad sense, with the explicit intention of emphasizing the pupil's learning activity. Management of learning is a form of management, where the part of the teacher is very well specified. He has to develop all his resources, and all children's resources, in order to achieve his objectives. He has to collect all the data required to monitor the progress and achievement, and according to this, to re-organize the whole process.

In his chapter, "What Is to Be Learned in School?", Clive Carré asserts that, in order to organize an appropriate framework for the pupils learning experience, the teacher needs:

- knowledge concerning the content of the taught discipline;
- general strategies of classroom management;
- information about the school curricula;
- psycho-pedagogic skills;
- psychological knowledge of the pupils.

It is relevant the fact that, right after the essential knowledge related to the discipline, i.e. the speciality, the authors places "strategies of class management". This proves the importance that the author gives to class management, in the global context of learning experience management.

Anne Cockburn, the author of the chapter "Learning in Classroom", maintains that the classroom is the best fit environment for the learning activity, on condition it is monitored by a competent teacher, since it is an extremely fluid, dynamic and the feed-back is hard to get. Learning is extremely sensitive to the framework where it takes place and to the context. Classroom management requires to set a favorable environment for learning. This means to set specific rules, in agreement with the children, which would establish very clear the framework of the learning activity.

Related with the classroom management, the classroom ergonomy is very important. The classroom design is a task assumed by the teacher, as the manager of the class of pupils.

Learning management is, in fact, the management of the psycho-social development of the child. Development, learning and social learning require a distinctive effort. Everything, starting from the environment of the class, the humor of the pupils, to the social-cultural context of the children, has to be controlled, planned and assessed by the teacher.

On the other hand, the teacher has to keep in mind the fact that the pupils learn in an artificially built environment, suitable for learning, but they will use the experience accumulated in this environment for real life situations, in authentic contexts. The management of learning experience of the pupils should concern a fundamental fact: the knowledge, skills and abilities acquired in an artificial environment (school, classroom), are aimed for an authentic, natural or social, environment. This requires a practical relevance of the curriculum, the monitoring and synchronization of classroom learning with extra-school activity of the children. The problems concerns, in fact, the form of school and extra-school learning. In school learning is taken out of context,

i.e. a pure mental activity, an individualized knowledge, a general education. Outside the school we can talk of a context of significant formative resources, involving shared knowledge, effective reasoning and situation-specific competence.

The activity of the teacher, as manager of learning activities of the children, involves:

1. To build the framework of learning;
2. The instructive-educational design;
3. To monitor the progress of the pupils (coordination and control);
4. Evaluation of all the activities.

Chris Kyriacou presents, in his chapter named "Direct Teaching", one of the best known strategies of learning management. Direct teaching designates the effective and actual involvement of the teacher in pupils' learning, the participation and interaction with the children, the substantive use of information, descriptions, explanations, modeling, demonstration. The teacher has to insure a good understanding of the knowledge, to form certain skills, abilities and attitudes that, together, would lead to a complete development of the pupils. Professor Kyriacou presents the methods of direct teaching:

- Informing, describing and explaining;
- Demonstrating, modeling and coaching;
- Asking questions;
- Monitoring practice and active intervention.
- Direct teaching by proxy.

Direct teaching is an efficient and effective educational strategy, it is economic and easy to adopt, but it situates the teacher in a much authoritative position, and the children in a state of inactivity and passive receptors.

"Managing Learning through Group Work" is the chapter where Neville Bennett approaches another aspect of learning management. The reason one should opt for group activity is, on one hand, the fact that building of meaning and understanding are essentially social activities; the teacher has to create all the conditions for a real interaction. On the other hand, classroom management is much more efficient in group work. The role of the teacher is to plan the activity of the children, to organize the working groups and to encourage the interactions of the members of the groups.

The organization of learning experience represents one of the tasks of the teacher, in his role of manager of pupils' activities, and it constitutes the theme of the study "Organizing Learning Experience", written by Sarah Tann, professor at Oxford Brookes University. The relationship between the pupils with the disciplines that are taught in school is mediated by the teacher.

His role is to organize as efficient as possible the learning activity of the children, from the perspective of the mediator, of interface for knowledge and pupil. There are more components involved in planning and organizing the effective experience of learning of the pupils:

- the discipline;
- the methods/means of learning;
- the types of tasks;
- the stages of the instructive-educational process;
- the resources involved;
- the social context;
- the evaluation.

The teacher should also take into account the available resources, the children's spontaneity, the differences among the pupils, the different rhythm of progress, the motivation of every pupil. The communication and interaction between the teacher and pupils is extremely important, also.

Closely linked to the planning of pupils' learning experience is the time management. In his chapter "Managing Time", Neville Bennett says that time represents a key-resource used by the teacher in his activity, alongside the

intrinsic resources of the pupils and of himself. In this respect we may talk of a temporal sacrifice of the teacher, and of a time investment of the pupils. The pedagogical competence involves also the abilities organize and plan the time.

The last part of the volume deals with the activity of assessment and evaluation. Brian Dockrell, from the University of Newcastle, emphasizes in his chapter "Assessment and Evaluation" the importance of testing and evaluation within the complex process of leading, coordinating and controlling the pupils learning experience. Putting it synthetically, he sustains that we may talk of a preliminary evaluation, before the learning activity of the pupils, producing a hierarchy of pupils. There are set expectations and a basis for the planning of the instructional activity, including the distribution of resources. Then one can speak of an evaluation during the didactic activities, in order to mark the progress of the pupils and to diagnose the difficulties encountered. This evaluation requires an on-going assessment of the instruction and the modifications during the process. Finally, there is the evaluation after the activity of learning is completed, and concerns mainly the final assessment of objective fulfillment, of the efficiency of pedagogical activity.

In the present pages, we tried to present one of the most relevant aspects of the volume "An Introduction to Teaching". We chose the management of pupils learning experience because it represents a revolutionary concept in education, and it is discussed during the whole book. I believe this concept produces a change in paradigm for the sciences of education, also involving a new understanding of the status of the teacher, which becomes more and more aware of his limits. The volume constitutes an excellent manual in this respect. It is a support for the students and young teachers who wish to become more efficient and more competent.

Cătălin GLAVA

RECENZII

Prof. univ. Miron Ionescu (coord.), ***Education and its dynamic,*** Bucureşti, Ed. Tribuna Învățământului, 1998.

Education and its dynamic is a collection of psycho-pedagogical studies meant to be a real support for teachers in there work of projecting, setting up, developing and evaluating the complex process of instruction and education as well a reliable sourcebook of reference for the continuing training of educators. The book offers in its fifteen chapters interesting approaches to issues of great importance in actual pedagogical field (the crises of education, the need for continuing education, the education of gifted children etc.) and it provides a comprehensive view to the new directions in educational research and practice. Overall, *Education and its dynamic* demonstrates the processual character of education and the exposure of this complex phenomenon to influences of a variety of natures that permanently shape its profile.

The editor of the book, professor Miron Ionescu is the Dean of Faculty of Psychology and Sciences of Education. In the first chapter of the book he analyzes the concept of macro-pedagogy, the *pedagogy of educational systems,* and micro-pedagogy, the *pedagogy of learning.* The discussion about the content of the concepts as well as the dynamic interrelations between them provides the theoretical context to describe the main directions of action and research in pedagogy, especially the need for a prospective view on the field of education, interdisciplinary approaches to educational phenomena, the construction of a specific system of pedagogical strategies, the growing emphasis on continuing studies etc. A special emphasis is made on the importance of drawing long term action plans, as well as on using mathematical and economic models in viewing pedagogical process and dynamics which is considered by the author as a way of setting educational system on more objective bases.

The second chapter focuses on the idea of ***educational crisis in contemporary society***. The author, senior professor D. Salade, argues that the problem of educational crisis is always an actual one, and tends to become a permanent one for most of the countries, even for the economically advanced ones. The author makes a pertinent analyses to the educational crisis in the Romanian socia - economical contexts, identifying causes, symptoms and implications. The final considerations about practical solutions to the crisis phenomenon in the Romanian education are of a real value for the practitioners.

The third chapter retakes for a thoughtful analyses one of the tendencies of education mentioned in the first chapter, the growing emphasis on ***continuing studies*** (permanent education). The author argues that adult education has a growing importance considering the permanent changes that occurs in social-economic and cultural fields. Points of view regarding the concept of continuing studies, its theoretical bases, objectives and teacher

training strategies for practicing it are described, inviting the reader to reflection and action.

Chapters four and fourteen analyze aspects of education for exceptional children of opposite natures, children exceptionally able and children with disabilities. Thus, *chapter Four* discusses an actual issue of Romanian pedagogy, ***the identification and education of gifted children.*** The nature of gifted intellect is discussed as well as specific strategies of assessment and education of gifted children. The author, professor A. Dancsuly, stresses the important role of family and trained teachers for the successful education of able children. For a long time this issue have been ignored so it has to become a priority for reflection and research for our teachers.

Chapter Fourteen offers a new perspective on the ***education of children with different special educational needs***, insisting on the need for teachers to be trained in working with this category of students as well. The author describes the new perspective on the education of special needs children (the philosophy of integration of children with SEN in the mainstream schools), stressing on the legislative implications worldwide. He describes very useful models of early intervention in SEN children's education, the characteristics that projects of special education have to accomplish, as well as specific means of approaching students' deficiency.

Given the close relationship between education and psychology by the means of the support that the former one finds in psychological knowledge, *the fifth chapter* draws the attention to the ***stages of psychological development in childhood and adolescence.*** It is about the particularities of physical and intellectual development in adolescence, the characteristics of emotional life in preadolescence and adolescence etc. The considerations about the dynamics of adolescence and about the process of defining the identity have a great utility in practical educational activities.

Chapters six and seven are approaches to the complex ***problem of learsning***, considered from different points of view. Thus, in Chapter Six, professors I. Radu and S. Szamoskozi analyze especially the intellectual potentiality of students. The concept of intelligence is considered both in its theoretical abstract content and in the operational description, points of view based on recent results of the psychology of learning. Reflections related to genetic component and the influences of environment and education have as a consequence the stressing made by the authors on the educational value of learning process.

The next chapter considers the same issue of school ***learning from the perspective of cognitive psychology.*** This is a new approach to learning that contributes to the substantialization to the process. In few defining lines, the portrait of cognitive psychology and its relations with the cognitive sciences are described. The second part of the chapter details didactic applications of cognitive psychology research in school learning (lesson structuring, problem solving etc.). The author, professor M. Miclea, provides a context of reflection regarding the organization and development of learning in the larger process of education.

Following chapters bring for discussion issues of didactic. Thus, considering data of learning psychology linked with results of experimental didactic and school practice, Chapter Eight describes aspects related to ***strategies and practices*** bothtypical and creative used ***in teaching-learning process***. After analyses made to lesson and other complementary forms of organization, the stress falls on the strategies of organization and development of educational activities. In this respect, some aspects of didactic are described, aspects that can influence the quality of learning: categories and

variants of lesson, feed-back, levels of success in school communities, success criteria in school activities, data collection and analysis etc. variables that can become a real support for quality improvement of instruction and self-instruction activities.

Chapter Nine regards issues related to ***didactic methodology***. The main characteristics of instructive methods, determined by school necessities as well as the results of psycho-pedagogical research are analyzed. Some modern methods of instruction, newly introduced in teachers' repertory are described, in order to create for teachers' use a real flexible work instrument, easy to adapt and highly interdisciplinary. The analyzes of different methods of instruction is made both from the perspective that offers them the value of work instrument but also that of a formative model.

On the same sphere of didactics, *Chapter Ten* regards different ***technical supports*** for instruction and self-instruction activities. A special accent is made on the variety of instruction possibilities offered by audio-visual means, on there support in students' effort for acquiring knowledge, deep understanding of studied processes and phenomena. Appropriate classifications and groupings are made for most of the means already used in the teaching-learning process, a general description of all means being offered, as well as there functions, there psycho-pedagogical exigencies in order to assure the productive utilization of them by both professors and students.

An analyses of the impact of informatics and ***computer techniques*** upon the methodological register of teaching- learning process is made by lecturer V. Chis in *Chapter Eleven* where the key points of the projection of instructive and educational activities are described on the bases of computer assisted instruction norms. The norms of computer assisted instruction, projection supports, elements of a model of pedagogical projection described here can be on a great help for those interested in these ideas and in there application in educational practice.

Chapter Twelve is dedicated to ***testing and evaluation*** of the level of scholastic achievement, a very actual issue, considering the efforts for improving the quality of this activity that is made in actual Romanian school context. The mechanisms of measurement, evaluation and school assessment are described; the impediments met by both, evaluators and evaluated ones are analyzed. Through relevant examples, analyses, comments, more rigorous means of evaluation and self-evaluation are suggested, including a more complex analyses of pupils' general progress.

A special chapter is dedicated to an issue of a great importance for Romanian pedagogy, ***moral civic behaviour development***. The approaches to this issue have been for a long time unilateral and highly reflective of political ideology in the previous regime. The effects were the insignificant research results and irrelevant school practices in this matter. Analyzing the moral profile issue from a new perspective, the author redefines concepts, describes the specific of moral behaviour achievement in school, discusses the main aspects of its content, stresses its complex and dynamic character and draws efficient strategies of moral-civic education started from in the family, continued in the school environment and developed throughout the entire individual life.

Considering the general idea of this book, the need for continuing training of teachers, authors of the last chapter, Prof. I. Radu and Prof. M. Ionescu offer means for reflection on ***issues of innovation and research in school*** context. The first part of the text analyzes the specific of innovation process in school context as well as the internal and external variables that claim for

innovation. The second part is a real support for those interested in educational research. The main idea is that the laboratory of pedagogical research is in schools where teachers experiment with theories in education and on shaping of personalities. The authors also discuss the unity between experiment and experience and describe the steps to be followed in a complex investigation as well as in an experimental process. The moments of preparation are described as well as the methodology of investigation in educational field. The data analyses stage is also detailed and it becomes an opportunity for arguing in the issue of quantitative - qualitative value judgments.

The main reason, declared by the authors, for editing the volume is to create a climate of reflection, of critical attitude towards the large offer of theoretical approaches to different issues in psycho-pedagogical field, not all of them valuable. The book reflects the joint efforts of the authors to base all there theoretical comments on research results and the orientation of each chapter strongly reflects the research interests of the authors. Remarkable as well is the preoccupation of the authors to make the texts more accessible by using schemes, tables, graphics and other relevant icons. Conclusively, the volume it is an important reference book for all educators, interested in continuing there professional training, in improving the quality of there teaching practice, or just in being up to date with the new reflections and tendencies of sciences of education.

Adina JUCAN

CRONICĂ

I. Manifestări ştiinţifice organizate de Catedra de Psihopedagogie Specială

Manifestări interne:

- Simpozion *Modalităţi de optimizare a procesului instructiv-educativ*, destinat copiilor cu cerinţe speciale (în colaborare cu Inspectoratul Şcolar Judeţean Cluj şi Şcoala Ajutătoare nr. 2 Cluj-Napoca), 20 nov. 1998.
- Workshop *Educational Technology Transfer*, organizat de: Universitatea "Babeş-Bolyai" Cluj-Napoca (Catedra de Psihopedagogie Specială, Catedra de Sociologie, Catedra de Mecanică), De Montfort University, Leicester, U.K., University of Ulster, U.K., Christelijke Hogeschool Windesheim, Zwolle, Olanda, L'Université de Lyon, Franţa, aprilie 1998.
- Workshop *de la Piaget la Internet*, organizat de organizat de: Universitatea "Babeş-Bolyai" Cluj-Napoca (Catedra de Psihopedagogie Specială, Catedra de Sociologie, Catedra de Mecanică), De Montfort University, Leicester, U.K., University of Ulster, U.K., Christelijke Hogeschool Windesheim, Zwolle, Olanda, L'Université de Lyon, Franţa, decembrie 1998.

Colaborări din străinătate şi vizite la catedră:

- Sue Walker, Royal London Society for the Blind, 25-26 nov. 1998.
- Jan Ottevanger, Maria Venhulzen, Theofaan International, Grave, Olanda.
- Michael Callaghan, De montfort University, Leicester, U.K.
- Cecilia Hannigan, University of Ulster, U.K.
- Jan Scholten, Aalt Riezebos, Christelijke Hogeschool Windesheim, Zwolle, Olanda.
- Theodore Tauth, L'Université de Lyon, Franţa, aprilie, decembrie 1998.

Participări la manifestări ştiinţifice externe:

- Prof. dr. Vasile Preda, asist. drd. Oltea Laura Ban, workshop *Le Systeme Educatif Spécialisé*, "Centre National Adaptation-Intégration Scolaire de Suresnes, Franţa, 12-14 oct. 1998.
- Prof.dr. Vasile Preda, asist.drd. Oltea-Laura Ban, Journées Pedagogique du GPEAA, Institut National de Jeuneusse Aveugles, Paris, 15-17 oct. 1998.
- Prof. dr. Vasile Preda, asist. drd. Cristina Mureşan, asist. drd. Maria-Dorina Anca, workshop *Education of Deaf-Blind*, Sense International, Londra, 30 nov.-6 dec. 1998.
- Lector drd. Mirela Arion, Conferinţa ECCE10, Limerick, Republica Irlanda, august 1998.
- Lector drd. Mirela Arion, workshop *New Media Communication Tools*, Londonderry, U.K., sept. 1998.

II. Manifestări ştiinţifice organizate de Catedra de Psihopedagogie Specială

Manifestări internaţionale:

- Workshop internaţional cu tema "Educational Technology Transfer", martie 1998, în cadrul programului TEMPUS S-JEP 12534-97;
- "Seminar on deafblindness", în cooperare cu SENSE INTERNATIONAL, 28-29 mai 1998.

Colaborări din străinătate şi vizite la catedră:

- John Viser, Harry Daniels, Christina \Tilstone, University of Birmingham, Marea Britanie;
- Cecilia Hannigan, University of Ulster, Irlanda;
- Michael Callaghan, De Montfort University, Leicester, Marea Britanie;
- Jan Scholten, Aalt Riezebos, Institutul Superior Windesheim, Zwolle, Olanda;
- Rodney Clark, Eileen Boothroyd, Mary Foster, Liz Duncan, Richard Hawkes, Ciprian Gimbuta, organizaţia SENSE INTERNATIONAL, Marea Britanie.

Participări la manifestări ştiinţifice externe:

- Vasile Preda, participant la workshop "Early Intervention for Visually Impaired", Theofaan International, Grave, Olanda, martie 1998;

Mirela Arion, participant la workshop "Early Intervention for Visually Impaired", Theofaan International, Grave, Olanda, martie 1998;

- Cristina Mureşan, schimb de experienţă la Universitatea din Nantes, Franţa, 25 aprilie-10 mai 1998;
- Vasile Preda, participant la workshop "Formation continue pour le personnel de l'éducation specialisée", C.N.E.F.E.I., Suresnes, Franţa, iulie 1998;
- Mirela Arion, participant la "European Conference on Cognitive Ergonomics ECCE9", Limerick, Irlanda, august 1998.

Cronica Ştiinţifică a Catedrei de Psihologie, Facultatea de Psihologie şi Ştiinţele Educaţiei Universitatea "Babeş-Bolyai"

Activităţi ştiinţifice desfăşurate în anul universitar 1997-1998:

(1) Organizarea celei de "A Treia Conferinţă Naţionale de Ştiinţe Cognitive, Timişoara, 1998;

(2) Organizarea Simpozionului Internaţional "Cognitive Science and its Applications", Timişoara ,1998;

(3) Stagii pregătire psihoterapie, SUA, Tenneessee University, 1998;

(4) Stagii cercetare în psihologia clinică a copilului, Anglia, Sutherland University, 1998;

(5) Participări la "Conferinţa Internaţională de Modelare Conexionistă", SUA, 1998;

(6) Programul postuniversitar de pregătire în psihoterapie şi hipnoterapie cognitiv Comportamentală;

(7) Şcoală Internaţională de Vară cu tema "Seeking for control in social and clinical psychology.

Manifestări Ştiinţifice organizate de Catedra de Ştiinţele Educaţiei

Manifestări internaţionale

- Simpozionul internaţional "Pregătirea continuă a profesorilor", 15-16 mai 1998, Cluj-Napoca

Colaborări din străinătate şi vizite la catedră:

- Harry Daniels, şeful Catedrei de educaţie integrată , Universitatea din Birmingham, Marea Britanie;
- Christina Tilstone, profesor la Universitatea din Birmingham, Marea Britanie;
- John Visser, profesor la Universitatea din Birmingham, Marea Britanie;
- Jesper Holst, profesor la Royal Danish School of Educational Studies Danemarca;
- Frank Belov, profesor la Royal Danish School of Educational Studies Danemarca;
- Miguel Lopez Melero, profesor la Universitatea din Malaga, Spania;
- Ignacio Rivas Flores, profesor la Universitatea din Malaga, Spania;
- Nicola Cuomo, profesor la Universitatea din Bologna, Italia;
- Giancarlo Martelli, profesor la Universitatea din Bologna, Italia;
- Fausto Telleri, profesor la Universitatea din Bologna, Italia;

P*articipări la manifestări ştiinţifice externe:*

- Vasile Chiş, participare la Seminarul Internaţional “Children Rights in Education" la Royal Danish School of Educational Studies, Danemarca, în perioada 7-22 aprilie 1998
- Miron Ionescu, participare la Simpozionul Internaţional "Grija statului pentru copiii supradotaţi", organizat de Şcoala Superioară pentru Educatoare Vârşeţ, Serbia, în perioada 5- 7 iunie 1998;
- Adina Jucan, participare la "Conferinţa Internaţională Challenging Pupils, Challenging Values, Emotional and Behavioural Difficulties in Europe" Benesov, Cehia, în perioada 20- 21 noiembrie 1998.