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# ROMANIAN EDUCATION SYSTEM SYNCOPE'S REVEALED BY PISA TESTS. CAUSES OF SCHOOL FAILURE AND POSSIBLE AMELIORATIVE INTERVENTIONS

ION ALBULESCU\*, MIRELA ALBULESCU\*\*

**ABSTRACT.** PISA type tests involving Romanian students in 2000 and until now have led to poor results, highlighting that the education system in Romania has many weaknesses. The national test results are not satisfactory. Of course, there are many students who achieve a higher level of academic preparation, proven in many situations. Schools proclaim its success citing their achievements. Nevertheless, the situation of school failure for many of their colleagues need urgent improvement interventions in terms of material and financial resources, school curriculum, learning strategies, improving teacher. In this study, we present in a synthetic manner, the undesirable situation, the causes that we believe generated it and possible solutions.

**Keywords:** *Testing, Assessment, Curriculum, school failure.*

**ZUSAMMENFASSUNG.** Die PISA Tests, an denen sich die rumänische Schüler seit Jahr 2000 bis heute beteiligten, endeten sich mit bescheidenen Ergebnissen, die zeigen, dass das Bildungssystem in Rumänien viele Lücken hat. Die Ergebnisse der nationalen Tests sind aber auch nicht zufriedenstellend. Natürlich gibt es einige Schüler, die ein höheres Maß an akademische Vorbereitung erreichen. Das kann in vielen Situationen bewährt werden. Die Schulen verkünden ihren Erfolg anhand dieser Leistungen. Aber die Situation des schulischen Misserfolgs, in der sich vielen ihrer Kollegen finden, verlangt dringend verbessernde Maßnahmen in Bezug auf materielle und finanzielle Ressourcen, Curriculum, Lehrstrategien, die Fortbildung der Lehrer. In dieser Studie bieten wir eine knappere Übersicht dieser unerwünschte Situation an. Wir stellen auch vor, die Ursachen, die unser Meinung nach, dazu geführt haben und mögliche Lösungen.

**Schlüsselwörter:** *Testen, Evaluation, Curriculum, Schulversagen.*

## 1. Introduction

For the past two decades, the educational reform has been one of the priorities on the agenda of all the successive governments. In this regard, a large number of legislative, institutional and content-related changes have been undertaken, the latter

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being stipulated in the new *Law of national education* (2011). The need to raise the Romanian educational system to high-quality standards for the benefit of the educated and the society as a whole has been frequently mentioned. The results obtained by the Romanian students at the national tests and especially at the international ones show that older practices are still in place and that the good results fail to become visible in an educational system that is permanently shaped by uneasiness, incertitude and lack of resources.

For most of the Romanian students studying means effort, an excruciating, docile and obedient effort that implies the ability to endure a great number of hours sitting quietly and focused in class. Moreover, apart from the great number of classes, students have to handle homework. How can the pleasure for learning emerge in such conditions? In school environment, the willingness to study should arise from thematic content, the form of activity, cooperation among colleagues, the possibility to share one's own experience with others, the teacher's function of facilitator, and the frail distinction between what students must study and what they wish. In many cases though, students do not go to school for the pleasure or its usefulness, because they cannot identify themselves and their world either in the schoolbooks or in the school curricula. Thus the educational system alienates students through its priorities: in fact, the curriculum is more important than the students, homework is more important than the individual's development, abstract knowledge is more important than practical knowledge, the theoretical-discursive abilities are more important than behavioural ones, providing information is more important than nurturing the student's development.

Schoolbooks and curricula are designed to „select” a minority and, hence, fail to guarantee to most of the students' chances to success. It makes sense, however, that there are many students who achieve higher performances, as it was demonstrated in many situations, through their socio-professional evolution after the completion of studies. Schools claim to be successful because of such results. To reward students has been considered to be an end in itself for any school. However, many students do not attain a satisfactory level of quality in the learning process. Reports drawn by the Ministry of Educational indicate, whenever they have the chance, that there is a growing number of students who are either mediocre or on the verge of becoming dropouts. These reports analyse the problem from a statistical point of view and then narrow it down to causes and solutions.

## **2. Failures of the Romanian educational system**

The poor results obtained by the Romanian students at international assessments, added to their socio-professional integration difficulties show that the current state of things must be changed without further delay and that the Romanian educational system displays many problems, which call for prompt action. Among the international evaluations, we can mention the Programme for International Student Assessment (PISA) representing a programme set up by the Organisation for Economic Co-operation

and Development (OECD) to assess through some standardized tests the level achieved in the learning process by 15-year old students from different world countries. The assessment takes place periodically, every three years. Each assessment period is named according to the year in which it takes place. During all PISA sit-ins both literacy rates regarding reading and competences in mathematics and sciences are assessed. Every period of assessment is preceded by a pre-assessment stage, which takes place one year before the main assessment and in which 800 to 1200 students from every country participate. In the main assessment there are 4500 – 10000 participants registered from every country. There are four periods of assessment already implemented at international level, which were completed in 2000, 2003, 2006, 2009. The 2012 PISA evaluation is to be carried through with 70 OECD participating and partner countries.

In the 2000 PISA evaluation the key subject was reading and contained an extensive set of tasks in this area. The 2003 session focused on basic mathematics skills with an extra field added in order to assess trans-curricular competences. The 2006 PISA test focused on sciences. In the 2009 evaluation reading was once again approached as the main subject. In the forthcoming 2012 evaluation, mathematics will be again the key subject of evaluation.

The PISA test measures the students' performances in the following subjects: reading, mathematics and sciences. They primarily allow the assessment of the level of preparation for adulthood. These areas are analysed in terms of mastery of basic knowledge and the skills needed in adult life, lifelong learning and on the labour market, and not in terms of school curriculum mastery. Assessing trans-curricular skills is a fundamental part of PISA testing. In this regard, each student will have to go through a two-hour written test. The test items follow different typologies: simple and complex multiple choice items, series of questions which require the production of short answers. The items are organized into sequences based on a text, usually taken from a real life situation. Students also answer a questionnaire on socio-educational issues, providing information about themselves, their families, their study habits, the school environment in which they learn, study conditions etc.

After processing and interpreting the results in the main assessment, a basic profile of knowledge and skills of students for all the tested subjects are drawn up. The Coordination Consortium of the PISA project calculates different types of contextual indicators associated with the relation between the students' performances and the socio-educational characteristics, including systemic ones, such as: gross domestic product, expenditure categories etc. Starting with PISA 2009 results, indicators of the tendency can be worked out and consolidated, illustrating how results and performances have varied in time for each subject (the first of which being reading), which can be significantly compared to the results of the year 2000.

Romania's participation in PISA is important because the results of the assessment can highlight the degree of preparation of Romanian students for lifelong learning, for further studies and life in general at the end of the compulsory-level education and can be used by educational management systems to identify issues which require improvement. The results of the assessment also allow comparisons

between the performances of the Romanian students (and their conditions of study and socio-economic environment) and the results of other students of the same age in OECD countries and partner countries.

The Romanian educational system has always obtained poor scores in the PISA tests, below the average score of the assessed countries. In 2000, Romania ranked 34 out of 43 participating countries, in 2003, it ranked 34 out of 38 countries and in 2006, it ranked 47 out of 56 countries at reading, and 45 out of 57 countries at mathematics (the penultimate place in Europe after Montenegro).

The ranking criterion at the 2009 PISA testing was the score obtained at reading and written text comprehension. In this test, the Romanian students did not obtain very good grades at any of the sections of the exam that they set for. The assessment, for which the Romanian participants had been selected according to certain criteria from amongst countryside schools, included three key subjects: reading, mathematics and sciences. In the overall ranking Romania was placed on the 49<sup>th</sup> position out of 70 assessed countries. In reading, Romania scored 424 points, 28 points more than the score recorded in the 2006 assessment, but 69 points below the average of participating countries, which was of 492 points. The results in mathematics were not better either. At this test, Romania scored 427 points, 12 points above the previous assessment, but 72 points below the average of 499 points. In the sciences section assessment, Romania scored 428 points, 10 points more than it achieved in the 2006 assessment, but 73 points below the average of 501 points. Although the 49<sup>th</sup> position out of 70 countries doesn't seem very worrying, if we were to refer strictly to the European Union, Romania occupied the last position. Moreover, among the European states, only Montenegro and Albania ranked below Romania. The most competitive educational systems have proved to be again Finland, South Korea, China, Canada and Japan.

The results obtained at other international evaluations are not more encouraging. TIMSS (Trends in International Mathematics and Science Study) is a study conducted by the International Association for the Evaluation of Educational Achievement, conducted every 4 years. Its purpose is to assess the educational background of students around the world. The evaluation regards students in final years of primary and middle school cycle (fourth and eighth grades in our case). Romania participated for the first time in 1995 when it ranked 34 out of 41 participating countries in mathematics, and 31 in sciences. In 2007, Romania ranked 26 out of 48 countries in mathematics, which represented the penultimate place in Europe after Bosnia, and 28 in sciences, that is the last position in Europe. PIRLS (Progress in International Reading Literacy Study) is another study undertaken by the same team which coordinates TIMSS. The methodology is similar to the TIMSS evaluation. Every five years, PIRLS assesses the linguistic competences of students in their final year of primary education. In 2001, Romania ranked 22 from 35 countries, and in 2006 it ranked 36 from 45 countries. These international tests show a correlation of results, as countries, which had achieved good or inferior results, are, generally, the same in all three rankings.

### 3. Explanations of Failure

As a result of both international and domestic assessments, including the evaluations carried out by business and of non-governmental organisations involved in education, it has been concluded that education in Romania is inefficient, inequitable, and irrelevant. Obviously, there are explanations that account for this situation, and most often the lack of motivation on behalf of both students and teachers, the insufficiency of investments in education or the irrelevance of the curriculum have been invoked. In respect of the results of the above-mentioned assessments, the explanations that account for the failure centre on the following aspects:

a) *The educational framework.* The failure of the Romanian students in these tests can be explained also through the existing differences regarding the educational contents and paradigms. The Romanian educational system preserves an educational framework based on theoretical contents, which is less practical and less interdisciplinary, where students are expected to move over, somewhat easily and naturally, from knowledge to competences. The foreground of the Romanian educational system continues to be governed by the principle „learning for knowing” and only than by „learning for doing, being, and living with the others”.

Various studies (Ungureanu, 1999; Stanciu, 1999; Chiş, 2002) reveal that the compulsory areas of the national school curriculum are: theoretical-conceptual, practical, interdisciplinary and competence-generating. The Romanian curriculum continues to favour the first area, when, in fact, it should start from the list of envisaged competences and level-based expectations, and only thereafter, it should focus on defining the targeted contents, capacities and attitudes.

The Romanian educational system has no integrated approach to teaching, except for the integrated curriculum used for preschool level education. To this end a change is necessary and urgent.

b) *Different assessment methods.* Over the last years, there have been many debates regarding the results scored by the Romanian students in the PISA tests, and the expressed opinions range from the assumption that Romanian education is positioned at a low level compared with the positions held by other countries, and the idea that the results do not actually reflect the real situation, given the fact that the Romanian educational system is not structured and organized to meet the requirements of such an assessment.

It has been also opinionated that this kind of assessment culture is absent in the Romanian educational system. The Romanian assessment system is not compatible with the PISA test because students are not accustomed with such an evaluation, as in normal, daily assessments, the emphasis falls on the quantity of the acquired information, while the PISA assessments are built on a completely different approach. Although PISA tests seem very easy at first sight, they are based on a different teaching paradigm, which relies on the learners' logical thinking and on the relationships between the acquired knowledge.



The way in which students are evaluated must be changed as well. For instance, in an assessment that evaluates mathematics, physics and chemistry-related knowledge, one may have in view how much and how can students think without relying strictly on the learnt formulas. Here is an example of a comparison of the same item viewed both from the Romanian perspective and from that of the PISA tests. The Romanian approach would be: „Find out the perimeter of the polygon in the next figure”, while the same task in the PISA tests would require: „The garden of a family has the shape and dimensions illustrated in the next figure. The family wants to build a fence, made of 20 cm wide boards. How many boards will be necessary, given a loss of 20% of the boards, and a 2 cm space between boards?” This is an example of the difference between the Romanian educational philosophy and that of the countries which scored higher in international assessments.

*c) Learning by heart.* In Romanian schools students have been used to learn by heart what they are taught or what they read in textbooks, therefore, the correlations with notions from other subjects, i.e. interdisciplinarity or trans-disciplinarity, have been, thus, overlooked.

The Romanian schooling system is based excessively on memorization, which is another cause of the poor results in the international assessments. There is still too much emphasis on theory, on irrelevant information without applicability in the real life of many students. Students are forced to memorize unnecessary information which is quickly forgotten after the test in question.

#### **4. Directions for Action**

*a) Increasing investments in education.* As a result of the *National Educational Law* (2011) and its related methodologies, both an improvement in the learning performance of students and an increase in the quality of the Romanian educational system have been expected. Understandably, the specific normative acts are not sufficient in this case. Instead, the following aspects are very important: the allocated investments, teaching materials, medical assistance, school transportation, the number of students in a classroom and equity. First of all, if we want to attain results, we should direct our attention to investments, which are essential for guaranteeing equal chances to students, especially to those living in rural areas, because they represented the majority in the group of students selected for the PISA assessment. Unfortunately, due to the new *National Educational Law* (2011), which stipulates the incorporation of the 9<sup>th</sup> grade of high school into the gymnasium level education, the students from rural areas will have even fewer chances. At present, the 9<sup>th</sup> grade functions as part of high schools, that is to say in educational institutions that are mostly located in cities, which has been an advantage for students, given the fact that there schools are better equipped and teachers are better prepared. Through this measure, we almost condemn the students from rural areas to remain there, when normally they should have been encouraged and helped to attend schools in

urban areas. How can students concentrate on studying when in many areas students are not even guaranteed school transportation? Many students are obligated to walk kilometres daily in order to get to school. On the other hand, if we wish to attain performance, we should also invest in the „After School” programme. When parents are concerned about surviving, that is to say about ensuring to their families all the necessary commodities for living, they scarcely have time to supervise their children. Without investments we will not solve anything and, unfortunately, as we can see, the annual percentage allocated to educational according to the Budget Law is very low, far from complying with the legal provisions, i.e. 6% of the GDP, given that European Union states, such as Denmark, Norway, Sweden and/or Finland generously allocate to education 8.5% of the Domestic Gross Product.

On the other hand, the decentralization process, i.e. the process of moving the decision making process as much as possible to where the basic activity takes place, must be accelerated. The success of the decentralization process depends mostly on two requirements which must be fulfilled:

- 1) Decentralization must concern all aspects involved in the educational process: curriculum, human resources, financing, administration;
- 2) Decentralization must contribute to strengthening the quality assurance mechanisms.

Decentralization is not an end in itself, it becomes meaningful only if it makes the system more efficient, more relevant, more equitable and improves its quality.

*b) Moving beyond elitism and exceptionalism.* Although we cannot minimize the progress achieved in restructuring and innovating the curricula, the Romanian educational system has not succeed yet to fully guarantee the development of all students' personal identity through integrity, self-assertion, reciprocity and behavioural abilities. In order to complete the compulsory level studies, students must prove the acquisition of knowledge rather impersonally, than functionally. Moreover, the complexity of the knowledge students must acquire exceeds by far, what they should know on completion of this study level.

The general and shared opinion among specialists in educational sciences is that education must not favour abstract content to the detriment of more formative aspects, and that a transition from knowledge encyclopaedism, impossible to achieve in the contemporary society, to a culture of contextualized action, is necessary. In spite of significant successes which have been achieved in the field of restructuring and modernizing the Romanian educational system, conservatism, egocentrism, exceptionalism, intellectualism, elitism, depersonalization and inequality of chances still make their presence felt.

Romanian education has remained largely an elitist education. Textbooks still contain very much information, which mainly makes use of logical and verbal intelligence, and address less intuitive, relational, communicative, emphatic, emotional and artistic intelligence. Although generous objectives of normative nature are stipulated in the curricula and many of them have a trans-disciplinary character, there

are too few approaches to facilitate their achievement. An implicit achievement of these is expected only as a consequence of the attainment of the objectives of informative nature.

Elitism and exceptionalism are the product, not necessarily intentional, of the overloaded curricula, of a hypertrophied intellectualism and of the assessment criteria. They cause and are caused by the influence of the decision factors to perpetuate a non-critical triumphalism. The pride of the decision factors increases and decreases according to the number of awarded students and medallists at the international Olympic contests. The first are highly interested in subjects for whom prizes are awarded at such contests, in inventorying medals, and less in the causes of school dropout and mediocrity or in the fact that after the completion of studies the youth thicken the lines of unemployed or are deficient in terms of civic education.

Subjects focus on abstract problems, which are unidentifiable in direct or real-world experience. This is why, for instance, after many years of studying physics and chemistry, many high-school graduates cannot explain the direct impact of physical-chemical phenomena, nor do students, after studying anatomy, know their organism and how to protect it. The history curricula and textbooks comprise topics whose content can be explored and exploited for the purpose of maximizing their impact on the students' life, such as: the prehistoric man (tools, weapons, occupations), the medieval man or the man in the Age of Enlightenment. But to what extent these topics can contribute to such an end is, however, debatable (Vlăsceanu, 2002). Moreover, in all these cases, the word „man” is used with a rather generic meaning, i.e. of human being, while the real-life people, real individuals, are completely missing from the picture, as sometimes occupations and lifestyles are also described in a most general manner. In addition, most of the times, relationships are not defined as linking people, but rather linking states and the latter are usually conflict-based, explained in terms of who controlled whom.

To this end, textbook writers should be more careful regarding the balance between general and particular when they design or plan out the topics to be taught. In this respect, every textbook should provide a balanced approach between general and particular elements. It is true that students accede to the general dimension through the mediation of close factuality, but, again, the latter's pre-eminence can, sometimes, block the path to the universal dimension. Therefore, one should reflect at the frequency and extension of circumstantial elements used in classroom teaching, especially if these are accidental or perishable.

For a long time an educated man was considered to be a person who possessed a large amount of knowledge from various fields, i.e. he was „encyclopaedic”. The emphasis on developing the skills of „knowing for doing” and „knowing for being” which contribute to the configuration of the personality profile we want students to be shaped up for, was also enormously overlooked. Intellectual education has been often perceived unilaterally, as an accumulation of information. According to such an approach, learning refers mainly to recording, storing and reproducing the

knowledge, which the teacher considered necessary to enhance the general knowledge of students (Pinas, Reynolds, Slattery, Taubman, 1995). Their reasoning and action were directed and controlled rigorously from the exterior, and the educational activity developed in a „sermon-inquiry” like way. Nor was there sufficient encouragement for research and discovery, personal reflection and creativity, except for the eternal repetitive exercise. Students’ life experience and real daily life were, thus, ignored.

The over-assessment of knowledge during a certain period, in the detriment of the complex development of the individual’s personality was not late in revealing its negative effects, that is: the unrealistic character of the educational system, the requisite that intellectual education is considered superior to other aspects of education and that training results are unilaterally developed, rendering people incapable of adapting themselves to the social needs (Salade, 1995). The authors of the old curricula and manuals have shared the so called „myth of the intellectualist” view, according to which the students had to be provided with a broad amount general knowledge mainly based on quantity, and the general assumption that the one who possesses this knowledge can as well make adequate use of it in life. This perspective has resulted in particular cases of high performance students, but at the level of the student masses it has proven to be a real failure.

The exaggerated encyclopaedic–intellectualist tendency cannot satisfy any more the requirements to which the current educational is subject. Certainly, the value of the knowledge of the students training cannot be argued, but what is extremely important is the formative character of this type of education, which should be based on the development of desired competences and attitudes. Knowledge acquirement alone cannot implicitly lead to the development of intellectual capacities and aptitudes. In the long-term approach of the new purposes of education, the reductionism which characterizes the traditional educational system is counterproductive. Reducing training to the transfer of information, taking the informed individual for the cultivated one, and transforming the encyclopaedic approach into an educational aspiration, have all biased student training and have sidetracked education from the current society’s requirements.

The objection that can be brought to the exaggerated intellectualistic education is the fact that structurally and cognitively it produces dogmatism, while affectively and inter-relationally it generates authoritarianism. It proves to be insufficiently formative as it over-emphasizes the purpose of the knowledge and does not encourage a complex development of the student’s character. School must not favour abstract contents to the detriment of formative aspects (Siebert, 2001). The reasons are not to do with formative exigencies only, but also with the impossibility of training for the acquisition of knowledge from a wide range of fields, the amount of which is growing in an alert rhythm.

The curricula shall orient the teaching and learning process towards „the training objectives which target the attainment of high-level competences, their applicability to new contexts and acquisition of theoretical and practical problem

solving skills” (Marga & Georgescu, 1999, p. 3). From such a perspective, the contents do not become less important, but turn into formative tools for high-level intellectual and relational competences, for the attitudes and behaviors that a young man needs in a democratic society.

*c) Curriculum innovation and flexibility.* A curriculum projection for a quality education that can respond efficiently to social exigencies requires a continuous revision and readjustment of the objectives, contents and action strategies, which exceed and improve the old models and principles. It is only in this way that a formative profile, appropriate to a world in a continuous and rapid change, can be promoted

The purpose of nowadays schools is to equip the student with a well structured set of functional competences. These mark the transition from an encyclopaedia of knowledge, impossible to be attained under the current conditions, to a culture of contextualized action. The curricula must entail only the essential skills to be learned, in order to avoid an overload of information, to meet the rapid rhythm of human knowledge development, and therewith to achieve the objectives of formative nature.

Consistent with the results of the modern pedagogical research and with the international tendencies of educational practice, the Romanian curriculum must design educational practices, characterized by:

1) Placing the learning process in the center of the school activities (it is not important what the teachers have taught, but what the students have learned).

2) Orienting the learning process towards the acquisition of competences and attitudes through the use of interactive strategies which can stimulate teaching and learning.

3) Creating a flexible curriculum and not a uniform and unique educational structure for everyone, designed to suit an abstract student, but a system of education tailored to meet the needs of each student, i.e. adequate for a real student.

4) Adapting the learning contents both to the real life situations and to the student’s activities, interests and aptitudes.

5) Introducing new ways of selecting and structuring objectives and contents according to the principle “not much but efficient”; it is not only ‘what’, but ‘how’, ‘when’ and ‘why’ we learn, and also what benefits it brings later on in real life of what we learnt in school.

6) Offering to students access to personalized educational pathways that are motivational, innovation and self-fulfilment oriented.

7) Assigning to all teaching staff responsibilities regarding designing, monitoring and evaluating the curriculum.

Curriculum flexibility can be also achieved through:

1) Increasing the number of classes in the curriculum by the school.

2) Increasing the teacher’s liberty to implement the curriculum for each subject.

Schools should be able to decide on the general curriculum in proportion of 20% in the compulsory educational level and 33% at high school level. Each school will decide, depending on the children’s learning needs, what exactly should be learnt

in 1/5 of the compulsory level classes, and in 1/3 of high school classes. Thus, schools will be able to make the student their main concern while responding to the community's needs and, at the same time, to be different in terms of the range of fields they offer.

At the same time, each discipline requires a flexible curriculum. A valid way of achieving this flexibility is by covering 75% of the teaching hours with the national curriculum and allowing teachers the freedom to decide on 25% of the curriculum for each discipline. Depending on the students' traits and the school strategies in which a teacher functions, he will decide if 25% of the time assigned to his discipline will be used for remedial learning in the case of students with deficiencies/ learning problems, for knowledge consolidation, or for stimulating those who are capable of higher performances. Such a flexible curriculum will give the chance to teachers to design individual lesson strategies, customized for each student.

d) A new approach to evaluation. The Romanian evaluation system is centered excessively on memory and deductive capacities, releasing, thus, cohorts of „poor students”, whose mental faculties are not sufficiently exploited. Well-prepared students are called those who prove to be faithful and conform to the system during knowledge reproduction. In such a case, we have to do with a summative assessment and not with a formative one.

Knowledge assessment practiced until present day in Romanian schools entails a series of major deficiencies:

- 1) The assessment focuses on the memorized information, rather than the developed competences
- 2) There is no relation between the rhythm of the assessment and the curriculum cycles of information acquirement
- 3) Assessment is often used to establish a hierarchy rather than give a feedback to both students and parents and create individual learning routes.

In order to be successful, the curriculum innovation process must be associated with the innovation of evaluation procedures, which, in turn, is based on the following principles:

- 1) Current and periodic evaluation is concerned not only with memorizing information but also with developing competences and attitudes;
- 2) Each curricular cycle, corresponding to the acquisition of certain skills, must be associated with a type of relevant periodic evaluation;
- 3) Periodical evaluations must not result solely in a rating grid, but must also consist of: a) a detailed report regarding the transcript of record and appropriate guidance forwarded to parents; b) a personalized learning-teaching route, recovery plans for the students with learning problems, speed up or knowledge consolidation plans for the talented students;
- 4) The national evaluation at the end of compulsory education and the Baccalaureate must provide a grading system similar to the PISA (The Program for International Student Assessment), which certifies the student's personal performance vis-à-vis the national curriculum requirements.

5) The use of a comprehensive assessment and monitoring tool, called the student's (educational) portfolio, that will provide not only results of the periodical assessments but also assessment reports, notifications regarding the student issued by the teachers or by the school board, degrees and certificates acquired by the students, or commissioned by other institutions than his school which can certify his special skills and performances. The educational portfolio will grant a more complex, multi-level and comprehensive assessment of the student.

e) Teacher training for the management and implementation of a new curriculum. Competence-focused curriculum and the increase of curricular flexibility are two options which run the risk of remaining poorly valorised in the absence of an appropriate training of the teaching staff and of the heads of school. Consequently, tools must be created and made available for schools, head teachers and trainers for identifying learning needs, analyzing students' characteristics, for drafting and the assessment of a decentralized curriculum, so that this could result in really formative effects for students. It is equally important to enrol the teachers in a rigorous training process to enhance their ability to use interactive teaching methods (Iucu, 2004; Cozma, 2008). Only this way, the children will rediscover the pleasure to learn new things, to discover the world. In addition, it is extremely important to motivate the teachers and to provide them with career development opportunities including through lifelong learning programs.

## **5. Conclusions**

The evolution of an economy is closely dependent on the qualification of human resources, which, in turn, depends on education. Even though an individual learns and is continuously improving his knowledge, study years are crucial for his development as an active person. A weak educational system cannot produce alumni generations, and this will have a huge impact on a country's rhythm of economic development. The quality of education is assured through a set of coherent actions aimed at the development of the institutional capacity of framing, planning and implementing efficient learning programs which meet the training needs of the beneficiary. The governments often declare that education is a foreground domain, but when the resources are divided most of these statements are completely forgotten, even though it is clear for everyone that without a healthy educational system you cannot obtain a long-term economic development. Since 2011, Romania has a new *National Educational Law*, which aims to bring major changes in what concerns the activity and the organization of this sector. Following the national and international assessments, we shall see what its effects will be.

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## ASSESSING PHONOLOGICAL PROCESSING THROUGH RHYMING ABILITIES

CAROLINA BODEA HAȚEGAN\*, MARIA ANCA\*\*

**ABSTRACT.** This paper is focused on assessing phonological abilities through rhyming abilities. These rhyming abilities are addressed by: rhyme exposure, judging upon rhymes, matching the rhyming words, producing rhyming words. Working procedures reveals a psycho-linguist approach for assessing rhyming abilities, this approach being implemented in the situation of a Pierre- Robin case study. The obtained results were analyzed in the context of an extended assessment session, they being able to underline the presence of a phonological processing deficit in this case. These results stress on the fact that rhyming abilities can be considered predictive factors in developing phonological abilities.

**Keywords:** *Pierre-Robin syndrome, phonological processing, rhyming abilities, psycho-linguist perspective, rhythm awareness*

**ZUSAMMENFASSUNG. Bewertung des phonologischen Prozesses durch die Reimfähigkeit.** Dieser Studie konzentriert sich auf die Bewertung der phonologische Fähigkeiten durch Reimfähigkeiten. Diese Reimfähigkeiten sind ausgerichtet durch: die Reimdarlegung, Beurteilung der Rhyme, Gleichsetzung der reimenden Wörter, Erzeugung der reimenden Wörter. Das Arbeitsprozess zeigt die psycho-linguistische Perspektive für Bewertung der Reimfähigkeit, diese Ansprache ist in der Pierre-Robin Kasus Studie benutzt. Die gegebenen Ergebnissen wurden analysiert in der Kontext einer erweiterten Bewertungszeit, dadurch konnte die Anwesenheit des phonologisch Prozess Defizites in dieser Kasus bekannt gemacht werden. Diese Ergebnisse zeigen, dass Reimfähigkeiten können als prediktive Faktoren für die Entwicklung der phonologischen Fähigkeiten betrachtet werden.

**Schlüsselwörter:** *Pierre-Robin Syndrom, phonologisches Prozess, Reimfähigkeiten, psycho-linguistische Perspektive, Rhythusbewusstsein*

### 1. Phonological processing

The concept of phonological awareness appeared around 1970, it being mostly used in relation with the problem of writing-reading acquisition, in relation with learning difficulties topic and, implicitly, in relation with oral language disorders

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(Borel-Maisonny, 1967 apud Burlea, 2007; Verza, 2003). Phonological awareness refers to a meta-linguistic type of knowledge, it being based on language phonological structure.

Phonemic awareness represents a specific element for alphabetic writing system, it being present in a discrete manner, during the pre-alphabetic period, but continuously developing during written language acquisition process. Phonemic awareness also includes phonemic hearing, it being a good predictive element for the future exposure to the alphabetic system coding rules. Thus, in the case of the children with learning difficulties, phonemic awareness is deficitary structured (Snow, Burns and Griffin, 1998 apud Chard, Dickson, 1999).

Phonological awareness ensures the process of segmentation, of understanding that each word has as constituent parts distinct phonemes, both segmental and suprasegmental ones. This understanding process provides the following abilities: the ability to identify, to differentiate and to manipulate the sounds within a certain word. Phonological awareness refers to the ability of manipulating speech sounds (phonemes) with relevance on words' meaning.

Phonological processing includes phonological and phonemic awareness, it having the following components: phonemic awareness, rhythm awareness, syllables, words and sentence awareness (Stanovich, 1993; Adams, 1990 apud Sensenbaugh, 2011).

In this paper the focus will be put on rhyming abilities, this being considered a good predictor for the entire phonological abilities. Rhyming abilities are approached, in this research, based on the directions promoted by Education Department from Virginia (1998) in projecting their curricular for early intervention. These directions are adapted according to Romanian language features.

## 2. Theoretical linguistic aspects on rhyme

According to linguistic theory, two words rhyme if the last stressed syllable and the two phonetic sequences that include it and the word ending are identical, e.g. "mare (big)-care (who)", "golan (bad boy)-borcan (jar)". This type of rhyme has been labeled **perfect rhyme**.

In addition to it, there are other forms of rhyme based on word similarities (Bower; Bolton, 1969; Gavrilă, Doboș, 2003):

- **Syllabic rhyme** – the last syllable of one word is identical to the last syllable of another word, although the two syllables do not contain a stressed vowel; e.g. "future (butterfly)-nasture (button)".

- **Imperfect rhyme** – based on a stressed sound sequence and an unstressed one; e.g. "nas (nose)-compas (compass)-baipas (by-pass)";

- **Weak rhyme** – established between two or more unstressed syllables; e.g. "catalog (catalogue)-omolog (correspondent)", "înaripat (with wings)-împăiat (stuffed)".

- **Semirhyme** – based on two words, one of which contains more syllables than the other; e.g. "avalanșă (avalanche)-etanșă (sealed)-nașă (godmother)".

- **Forced or oblique rhyme** – found in words that do not have common sound pairs; e.g. “până (to)-sunt (are)”; “lângă (next to)-pilă (file)”.
- **Assonance** – vowel-based; e.g. “apa (water)-alunecă (slide)-alene (maunder)”.
- **Alliteration** – formed through the repetition of the initial consonant; e.g. “tata (father)-taie (cuts)-tare (powerful)”.
- **Partial rhyme** – established between words with common final consonants; e.g. “bun (good)-alin (comfort)-ciorchin (cluster)”.
- **Pararhyme** – formed when all consonants in words are identical; e.g. “masă (table)-mese (tables)”; “spune (tells)-spini (thorns)”.
- **Hyper-rhyme** – appears when the words have in common the sound sequence containing the last stressed vowel. This type is weaker than the perfect rhyme and has lower stylistic value; e.g. “golan (bad boy)-molan (it is a pseudo-word in Romanian language, it doesn't mean anything)”, “fecior (boy)-picior (leg)”.

### 3. The process of assessing phonological skills pertaining to rhyme

#### 3.1. Objectives

- elaborating probes for assessing rhyming abilities in Romanian language;
- assessing rhyming abilities in a Pierre-Robin syndrome case;
- underlining rhyming abilities as predictors for phonological abilities.

#### 3.2. Hypothesis

- assessing rhyming abilities can ensure an adequate perspective over phonological abilities.

#### 3.3. Participants in the research

This research is based on a Pierre-Robin syndrome case. The selection criterion was just the diagnosis. Pierre-Robin syndrome is characterized through pronunciation and voice disorders based on labial-maxilla-palatal-cleft, but also through hearing impairment and learning difficulties (Davidson et. al, 2012; Jidveianu, 2009; Juarez-Villegas, 2010; Pather, 2009; Redett, 2008). Starting from these features, the case ensures us the possibility of reaching the proposed objectives and testing the above formulated hypothesis.

#### 3.4. Procedural aspects

This chapter focuses on the development of the ability to perceive sound correspondences in word endings, as well as in lyrics forming a stanza.

The activities that help reaching the above-mentioned objectives include:

- exposure to rhyming structures;
- assessing whether word pairs rhyme or not;
- producing rhyme (providing words with the same sound endings).

An important aspect of this research is that the probes used for assessing rhyming abilities are elaborated based on the developmental features of the child participant in the research.

### 3. 5. *Obtained results*

#### 3.5.1. *Rhyme recognition*

The process of assessing phonological skills pertaining to rhyme began through a task centred on circling word pairs that rhymed. Five out of the twenty word pairs included on worksheet did not rhyme at all, whereas two had forced or oblique rhyme. One must underline here the fact that the sheet contains all the types of rhyme mentioned in the theoretical section. The translation of all the figures can be found in the papers` annexes section.

Încercuiește perechile de cuvinte care rimează

1	mare-care
2	golan-borcan
3	pare-nimic
4	fluture-nasture
5	nas-compass
6	bine-copil
7	inaripat-împăiat
8	calculator-internet
9	ăvalanșă-etanșă
10	lângă-pilă
11	până-sunt
12	apa-alunecă
13	tata-taie
14	cană-pahar
15	alin-ciorchin
16	masă-mese
17	spune-spini
18	golan-molan
19	ficior-picior
20	pantof-cuțit

Fig. 1. Sheet for the identification of rhyming word pairs

The child has managed to identify correctly 10 rhyming word pairs. We have not identified any erroneous marking of rhyme. Nonetheless, he did not notice the following rhyme categories:

- perfect rhyme in the word pair “mare (big)-care (who)”;

- assonance in the word pair “apa (water)-alunecă (slice)”;
- forced rhyme in the word pairs “lângă (next to)-pilă (file)”, “până (to)-sunt (are)”;
- pararhyme or alliteration in the word pair “masă (table)-mese (tables)”.

The child’s working style is based on a visual comparison of the lexical items presented for phonological analysis. The auditory perception analysis of the target items presents doubts and uncertainties. The errors he has made were caused by the auditory perception decision-making style he has applied.

In order to verify the predominantly visual decision-making style, an additional task was provided. It implied establishing whether two words rhymed or not by indicating the constituent sounds that formed the rhyme.

**2. Judecați asupra rimelor:**

1	<u>cl</u> ing	cl <u>ong</u>	A-F
2	alu <u>ne</u>	tăci <u>une</u>	A-F
3	Maria	Anania	A-F
4	<u>d</u> ulap	<u>d</u> ovleac	A-F
5	s <u>are</u>	crud <u>e</u>	A-F
6	antr <u>eu</u>	sal <u>eu</u>	A-F
7	tirbu <u>șon</u>	tomber <u>on</u>	A-F
8	pustiu	nor	A-F
9	can <u>di</u> dat	can <u>ton</u> ât	A-F
10	plăc <u>in</u> te	cum <u>in</u> te	A-F
11	tractor	avion	A-F

Fig. 2. Sheet for identifying the word parts that generate rhyme.

With this task, the child did not make any mistakes in analysing the 11 items provided, as the explorations of the word pairs was based exclusively on visual perception. The above illustration underlines the fact that the rhyme type has a smaller weight in correctly assessing rhyming word pairs, as the child has successfully identified the phonological sequences that formed rhyme. Moreover, he easily delimited both the initial and the final sequences in words, regardless of whether they contained mono-member or pluri-member vowels, or consonants.

In the case of the “Maria-Anania” word pair, the child hesitated when asked to establish whether the two words rhymed or not and decided that they randomly rhyme, without being able however to identify the sound sequence that created the rhyme. The child actually mentioned verbally that the two words appeared to rhyme only partially. In the case of the intriguing above-mentioned pair, the fact that it is formed of proper nouns has contributed to the observed hesitation.

One must also mention that the child has solved the task quietly, verbalizing only upon request and relying exclusively on a visual analysis of the words. In this situation, he has not attempted to decodify and comprehend the read words, thus making only a superficial exploration. Assessing the word pairs from a sound perspective was not influenced by the semantic content of the target items, which enables us to put forward the hypothesis that **the difficulties in learning reading and writing are centred in the case of this child on the lexical level, with further implications on the phonetical and phonological level.**

In order to verify this hypothesis, we have devised another exercise. The child received the task to identify the word that did not rhyme with the others in a series of five items.

### 3. Stabilește cine nu rimează:

foc	loc	joc	vulpe	doc
tac	fac	deloc	nac	buia
sus	uns	pătruns	nară	ras
cuminte	bunic	părinte	plăcinte	aminte
talpă	bondar	iapă	saltă	arată

Fig. 3. Exercise for identifying the word that does not rhyme in a series of items.

In the case of this task, the child has succeeded in identifying correctly only two out of the five words. His chosen work strategy is exclusively based on visual exploration as well. Consequently, when the number of analyzed items grows, the non-rhyming word selection from a series is made randomly.

This type of task also underlines the fact that working memory has a limited span, as the child could not remember a greater number of items submitted for comparison. This becomes all the more difficult as he did not verbalized the words he read to himself quietly and did not make use of comparison strategies based on auditory perception skills.

#### 3.5.2. Rhyme generation

Another task designed to assess the phonological processing skills through rhymes consisted of generating rhymes on the basis of two-word series.

At this stage, we noticed the difficulty with which the child approached the task, the numerous attempts made, the increased latency in providing answers, as well as the insecurity with which he performed the task.

The fact that he managed to find only one or two rhyming words, while providing others that were completely inappropriate, also stood out.

**Generare de rime pornind de la un cuvânt:**

casă	masă			
pun	bun	scun	picior	
pat	bat	scapuz	adun	Andrei
sar	rar			
bine	sine			
cal	mal			
rana	pana			
lin	pin	spin	spun	
tare	sare	mare	scapuz	

**Fig. 4.** Rhyme generation exercise.

The first word series caused confusion between rhyming words and items belonging to the same lexical field, a fact that proves poor mnemonic abilities and limited semantic processing skills. This provides a justification for the hypothesis stating that the lexical deficit is responsible for the learning problems present.

The increased level of difficulty of the task became obvious when the child refused to solve all the series provided.

## Conclusions

The data collected in this research were corroborated with data collected by implementing different other strategies in assessing phonological (words segmentation, sounds deletions, syllables deletions, writing and reading phonological complex words) and lexical abilities (defining words, completing lexical paradigms by enumerating constituents lexical items, elaborating sentences, elaborating short thematic texts, writing and reading different words and texts, answering questions based on a previously read text). The data collected by implementing these other strategies were gathered in two different papers being in press (Anca, Hațegan, Talaș, 2012). By overlapping the data we can consider that the investigation approach design based on the above mention hypothesis is a correct one, rhyming abilities can be consider a good predictor for phonological abilities development in the context of learning difficulties and in the context of a Pierre-Robin case. These results will be further analyzed in a complex research, aimed for standardizing an assessing procedure for phonological abilities stressing on rhyming abilities.



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## Annexes

## 1. Încercuiește perechile de cuvinte care rimează (Circles the rhyming pair of words)

mare-care	big-who
golan-borcan	bad boy-jar
pare-nimic	seems-nothing
fluture-nasture	butterfly-button
nas-compas	nose-compass
bine-copil	good-child
înaripat-împăiat	with wings-stuffed
calculator-internet	computer-internet
avalanșă-etanșă	avalanche-sealed
lângă-pilă	next to-file
până-sunt	to-are
apa-alunecă	water-slide
tata-taie	father-cuts
cană-pahar	cup-glass
alin-ciorchin	comfor-cluster
masă-mese	table-tables
spune-spini	tells-thorns
golan-molan	bad boy-molan (this a pseudoword in romanian language, it doesn't mean anything)
ficior-picior	boy-leg
pantof-cuțit	shoe-knife

Annexe. 1 Translation of fig. 1.

## 2. Judecăți asupra rimelor (Judging upon rhymes)

Cling (Romanian onomatopoeia for describing the sound of the bells)	Clong (Romanian onomatopoeia for describing the sound of the bells)	A-F (True-False)
Alune (nuts)	Tăciune (smut)	A-F (True-False)
Maria (proper name)	Anania (Proper name)	A-F (True-False)
Dulap (locker)	Dovleac (pumpkin)	A-F (True-False)
Sare (salt)	Crude (mean)	A-F (True-False)
Antreu (entree)	Saleu (cookie)	A-F (True-False)
Tirbușon (opener)	Tomberon (garbage box)	A-F (True-False)
Pustiu (empty)	Nor (cloud)	A-F (True-False)
Candidat (candidate)	Cantonat (fixed)	A-F (True-False)
Plăcinte (pies)	Cuminte (good)	A-F (True-False)
Tractor (tractor)	Avion (plane)	A-F (True-False)

Annexe. 2 Translation of fig. 2.

**3. Stabilește cine nu rimează**  
(Identify the nonrhyming word from the serie)

Foc (fire)	Loc (place)	Joc (game)	Vulpe (fox)	Doc (a pseudo-word in Romanian language)
Tac (keep quiet)	Fac (do)	Deloc (anything at all)	Nac (a pseudo-word in Romanian language)	Buiac (lofty)
Sus (up)	Uns (anointed)	Pătruns (penetrated)	Nară (nostrils)	Ras (shaved)
Cuminte (good)	Bunic (grandfather)	Părinte (parent)	Plăcinte (pies)	Aminte (aware)
Talpă (leg)	Bondar (bumblebee)	Iapă (mare)	Saltă (push)	Arată (show)

*Annexe. 3 Translation of fig. 3*

**4. Generare de rime pornind de la un cuvânt**  
(Generating rhyming words starting from a given word)

Casă (house)	Masă (table)	Scaun (chair)	Picior (leg)	
Pun (put)	Bun (Good)	Sapun (soap)	Adun (gather)	Andrei (proper name)
Pat (bed)	Bat (Beat)			
Sar (jump)	Rar (rare)			
Bine (well)	Sine (himself)			
Cal (horse)	Mal (shore)			
Rana (injury)	Pana (feather)			
Lin (slow)	Pin (pine)	Spin (thorn)	Spun (tell)	
Tare (powerful)	Sare (jump)	Mare (big)	Raspund (answer)	

*Annexe. 4 Translation of fig. 4*

## PSYCHO-PEDAGOGICAL INTERVENTION PROGRAM IN STUDENTS WITH LEARNING DIFFICULTIES

CLAUDIA-DOINA GREC\*, VASILE CHIȘ\*\*

**ABSTRACT.** The present research aims to investigate the efficacy of a psycho-pedagogical intervention program based on educational techniques, designed to develop organizational skills in children with disorders from the attention deficit and hyperactivity spectrum who present learning difficulty. The set of techniques can be easily implemented by the teacher in the classroom and has been applied in the context of the *Language and communication* curriculum area. Disorders belonging to the spectrum of the attention deficit and hyperactivity expose students to a risk of poor school performance, social isolation and antisocial behavior. The biggest challenge for a teacher is to maintain the interest of such a child, accept and appreciate him. Starting from the principle of differentiated instruction, equal opportunities can be ensured for all students by applying pedagogical intervention programs in the case of students with disorders from the attention deficit and hyperactivity spectrum.

**Keywords:** *learning difficulties, organizational skills, intervention programs, executive functions, and neuropsychological tests.*

**ZUSAMMENFASSUNG.** Die gegenwärtige Forschung zielt darauf, die Wirksamkeit eines psicho-pädagogisches Interventionsprogrammes zu untersuchen. Dieses basiert auf pädagogischen Techniken, die der Entwicklung von organisatorischen Fähigkeiten bei Kinder mit Störungen im Spektrum des Aufmerksamkeits-Defizit und Hyperaktivität, die Schwierigkeiten beim Lernen haben, dienen. Das Technikenpaket ist von den Lehrern einfach umzusetzen und wurde im Kontext des Lehrplan-Bereichs der Sprache und Kommunikation angewendet. Die Störungen im Spektrum des Aufmerksamkeits- und Hyperaktivitätsdefizits setzen den Schülern das Risiko an schlechte Schulleistungen aus, soziale Isolation und antisoziales Verhalten. Die grösste Herausforderung, für ein Lehrer, ist das Interesse solchen Schüler zu bewahren, ihm zu akzeptieren und zu beurteilen. Ausgehend vom Prinzip der differenzierten Erziehung, durch die Anwendung von psicho-pädagogischen Interventionsprogramme beim Schülern mit mit Störungen im Spektrum des Aufmerksamkeits-Defizit und Hyperaktivität, es kann einen gleichen Niveau von Erziehung allen Schülern erhalten werden.

**Schlüsselwörter:** *Lernschwierigkeiten, organisatorische Fähigkeiten, Interventionsprogramme, exekutive Funktionen, neuropsychologische Tests*

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## 1. Introduction

Deficit in the sphere of attention deficit and hyperactivity, other manifestations such as impulsiveness or poor executive functions, expose students to the risk of poor school performance, social isolation and antisocial behavior. Students with disorders from the attention deficit and hyperactivity spectrum acquire harder their skills of organization, planning, time management, in comparison with their school colleagues. To what extent do these deficits affect school performance?

We can find out the answer to this question measuring the development level of organizational skills of school activity, for example: students must write down their homework, organize their projects and their study time, maintain an optimum motivation and maintain focused their attention for considerable time, adapt to different teachers, keep up with a large volume of materials and requirements.

Difficulties students with disorders from the attention deficit and hyperactivity spectrum meet when they have to adapt to school can be ameliorated through structured and customized psycho-pedagogical intervention programs. Psycho-pedagogical literature in the field of intervention programs for disorders from the attention deficit and hyperactivity spectrum belongs, in our opinion, to the exploration (observation) and formative ameliorative parcelling interventions type.

Even in the case of these exploratory-formative approaches, literature from our country is not enough for this kind of studies, and the cultural factor as well as the Romanian educational context are two variables that raise up questions concerning the effectiveness of interventions proposed by the results of international studies.

The school environment is a context that requires planning, control, coordination and evaluation of the interaction and of the ways of active participation in the educative-instruction process. In consequence, school is an appropriate environment to exercise self-control (Miranda et al., 2006). At the same time, school represents a challenge for children with disorders from the attention deficit and hyperactivity spectrum, this disorder being usually diagnosed when going to school, that is after the age of seven, precisely because of the accentuation of symptoms as a consequence of the increase in requirements concerning attention, school work organization and other responsibilities.

Specialized international literature is rich in research focused on the effectiveness of various types of interventions on behavior and academic achievement of students with disorders from the attention deficit and hyperactivity spectrum. Most of these studies measure the effectiveness of the psycho-pedagogical program on indicators such as increase of task oriented behavior frequency, decrease of frequency and periods of attention deficit, decrease of frequency and periods of hyperactivity.

Psycho-pedagogical interventions in school can benefit from various techniques such as behaviors reinforcement and behavior reduction strategies or combined behavioral and cognitive techniques with focus on organization strategies, social skills and independent work skills (Miranda et al., 2006).

Combined intervention techniques is an option also recommended by the American Academy of Pediatrics that introduces the concept of educational and behavioral intervention (Campbell & Cohen, 1990, quoted by Reiber & Mc Laughlin, 2004).

Psycho-pedagogical intervention can and sometimes must be associated with medical intervention, respectively drug treatment. Experience shows that drug treatment does not resolve difficulties by itself. Even after its commencement, organizational skills have to be formed and / or consolidated. Medications only prepare the body for proper functioning, but do not equip it with the necessary skills.

## **2. Methodology**

### **2.1 Research objectives**

Starting from the principle of differentiated instruction, it is recognized that all students must receive educational resources appropriately, according to individual characteristics and needs. By applying some psycho-pedagogical intervention programs on students with disorders from the attention deficit and hyperactivity spectrum, equal opportunities of development for this category of students can be ensured.

This paper aims to elaborate and implement a psycho-pedagogical intervention program based on "organizational skills development techniques in the case of students with disorders from the attention deficit and hyperactivity spectrum". This set of techniques has been developed so that it could be implemented by the classroom teacher in the context of *Language and communication* curriculum area.

### **2.2 Hypotheses**

#### *General hypothesis*

Consistent application in the case of students with disorders from the attention deficit and hyperactivity spectrum (grades 2-4), of a psycho-pedagogical program structured on general organization components, in relation to the specific profile of executive functions contribute to efficiency of learning.

We will measure learning efficiency indices as follows: performance at reading comprehension, picture composition, reading fluency and executive functioning skills using the Rey test (complex figure) and the Tower subtest of the Nepsy tests battery.

#### *Specific hypotheses*

1. The profile of executive functions correlates differently with school performance in reading and writing tasks.
2. The development and practice of organizational skills, self-organization supports significantly the elimination process of reading and writing difficulties.

### ***2.3 Research development***

In order to test the proposed hypotheses, an intra-subject experimental approach of the type pretest-intervention-posttest has been chosen.

The independent variable is the pedagogical intervention.

The dependent variable becomes operational by the scores obtained after applying the general organizational skills assessment scale, the results obtained from the neuropsychological tests (Rey complex figure test: copy and recall; Tower subtest) with the psycho-pedagogical ones (L'Alouette test; reading comprehension, picture composition).

### ***2.4 The procedure***

The present research was conducted on a number of 55 students with disorders from the attention deficit and hyperactivity spectrum.

The first stage consisted in using some educational assessment tools. These were applied to the entire class of students, some of them presenting disorders from the attention deficit and hyperactivity spectrum, to see if there were differences between the two groups of students on the vocabulary and graphics performance. The purpose of using an evaluation tool in a classroom was to observe the behavior of students with disorders from the attention deficit and hyperactivity spectrum during an activity. We expect that students with disorders from the attention deficit and hyperactivity spectrum will be more frequently distracted by other stimuli and present difficulties in focusing on assigned tasks.

This phase began by applying a behavior assessment scale in the case of the students with disorders from the attention deficit and hyperactivity spectrum. This scale was completed by the teacher, allowing highlighting the types of attention deficit and hyperactivity disorder (predominantly inattentive, hyperactive or combined).

Afterwards, two dictation tests were applied: one of them consisted in isolated words and sentences and the other one in an eight lines text.

In the process of writing by dictation intervene auditory and phono-articulator factors as well as semantic and motor-kinesthetic factors. Due to this aspect, dictation seems to be an adequate task for our research. In this task, the text was presented orally, and students only had to listen. Students had to write only at the second presentation of the text. The rhythm of dictation for this task was the one usually used with these students. Once they have finished writing, students reread their work and had the opportunity to correct any errors.

Afterwards another test was given and students had to write down the ideas of a text they heard. The text was presented orally two times. The purpose of this task was to observe how students write by dictation and how they manage to convey in writing the ideas they formulated starting from a text presented orally.

In order to highlight problems in reading fluency and text comprehension, students were asked to read a text at first sight and narrate orally what they read.

There were identified 52 students with disorders from the attention deficit and hyperactivity spectrum who also presented learning difficulties. The parents of 42 students gave their consent to participate in implementing the intervention program.

Students with disorders from the attention deficit and hyperactivity spectrum who also presented lexical and graphical problems underwent further investigations, in the second stage.

The second stage consisted in the use of psycho-pedagogical instruments.

L'Alouette Test (the lark) was used in the case of all students with disorders from the attention deficit and hyperactivity spectrum. P. Lefavrais (Foucambert, 1983), the author of the test explains that the habitude of seeing the words allows you to formulate them starting from what is strictly necessary to recognize them, called aspect-stimulus. He also explains that ideation makes the reader go on and anticipate the formulation and maybe make a mistake and place there a word his degree of understanding allows him to expect to occur. It is about projecting (throwing) sense on words. Preparing a text for lecture is therefore proposing a text to be read aloud, a text that is apparently quite simple for a reader but in reality is composed of *trap-words* (words you would not expect).

Another task was reading a text at first sight and its comprehension. Reading includes two basic processes, namely the *decoding process* that involves understanding the relationship between phoneme and grapheme and its translation from a representation specific to oral language into written language, and the *process of comprehension*, that make the student understand the meaning of isolated words or of words that are in the context.

Laurence Rieben (1989) makes a cognitive analysis of learning to read difficulties. The distinction Rieben makes between the two processes involved in reading is the following:

- Word identification processes are very fast and automatized central processes;
- Understanding processes require maximum concentration of cognitive resources, which is possible as long as the previous processes present a sufficient level of automation.

The evaluation of written expression – picture composition – aimed highlighting the capacity of organizing and formulating ideas, the familiarity with the grammar, the vocabulary level. It is one of the activities with the best results in the evaluation of speech development, speech fluency, of the ability to organize and formulate correct sentences. It also indicates the details that attracted attention.

The neuropsychological tests used were Rey test (complex figure) and Tower subtest from Nepsy battery. Perceiving visually is not the same as experiencing a simple sensory contact, but a reactivation- in contact with the reality - of the visual



habituations or contracting new ones. Tower subtest may reflect deficits in the ability to plan work strategy.

The implementation of the intervention program consisted in development techniques of the organizational skills in students with disorders from the attention deficit and hyperactivity spectrum. It lasted over eight weeks and represented the third stage.

The fourth stage consisted in the reevaluation of the results. In this stage were used: L'Alouette test, tasks for reading comprehension and picture composition and neuropsychological tests (Rey-complex figure test and Tower subtest of Nepsy battery). In this stage, reading comprehension and picture composition tasks were similar to those used in the second stage, respecting the structure and composition rules.

### **2.5 Participants**

The research was conducted on a group of research participants composed of 42 students with disorders from the attention deficit and hyperactivity spectrum, inattentive, hyperactive / impulsive and combined type, integrated in mainstream education. Previously was obtained verbal permission from students and classroom teachers and written consent from the parents of students involved in this research.

Students that participated in the research were enrolled in the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> grades in several schools in the city of Targu Mures. As the manifestation of learning difficulties (dyslexia-dysgraphia phenomena) has a constant character, the diagnosis is established starting with the second year of schooling.

### **2.6 Instruments**

The methodology of this study is a composite one and includes docimological and psychological tests and a behavioral assessment scale.

At first, was applied a *Rating scale of children's with attention deficit and hyperactivity disorder behavior*. This was applied to the teacher in order to confirm / infirm the presence of characteristic symptoms in these students. The scale includes symptoms characteristic to different types of attention deficit and hyperactivity disorder: inattention, hyperactivity / impulsivity and combined indicating the frequency of each manifestation (never, sometimes, often, always) and was elaborated taking into account the diagnostic criteria presented in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, 2000).

In order to detect students with disorders form the spectrum of the attention deficit and hyperactivity presenting lexicographical disorders were used tasks including dictation, listening comprehension and reading comprehension of a text at first sight.

*Dictation tests* were made so as to meet phonetic and lexical requirements specific to Romanian language. It started with the dictation of isolated words and sentences, continued with a text made up of words containing various combinations

of consonants, groups of letters, diphthongs, etc., in the composition of which was taken into account student's ability to concentrate.

*Another test was listening comprehension*, in which students had to write down the ideas of a text that had been presented orally. The text was new to students, adequate to their age. When asking students to transcribe spontaneous oral language into written language we tried to verify if mistakes were caused by the conflicting value of the word or by some disturbing elements involved in the circumstances and the specific of the dictation test.

*Reading a text at first sight* was another test used for identifying learning difficulties, being a visual-auditory task involving reaching comprehension by using symbols: letters and words. Reading fluency and the ability to narrate orally what was read were analyzed.

There were used the following psycho-pedagogical tests: L'Alouette, reading comprehension, picture composition and the neuropsychological tests: Rey complex figure test and Tower subtest from Nepsy battery.

L'Alouette test was applied, which provides indications of the performance of reading aloud an unknown text. The text consists of 265 words, many of them unknown to the subjects and must be read in less than three minutes. Words that make up the text are mostly neologisms ("concession", "fluid", "deduction", "dialect", etc..), complex structured, impossible constructions ("At dawn a trumpet declines", "A cart of articulation is neutral", "The brush soufflé has an ancient, warm, refreshing difficulty " etc..), a "salad" of words that form various sentences, meaningless in context. This test's main purpose is to evaluate the accuracy and speed of reading aloud. The test enables the evaluation of the reading fluency. There is no control of reading comprehension.

*Reading comprehension test* is an informational tool concerning reading comprehension. In this test was analyzed conscious reading, the way in which words, sentences and text were understood. The term of conscious reading involves an active reading in which are engaged student's thinking operations and affective processes, thus contributing to a nuanced and sensitive understanding of the text. Formulated questions indicate if text's message was understood, details will be asked for, the relationship cause-effect/consequences of the events will be highlighted, participants will be asked to explain the sense of words whose meaning is obvious from the text read. Students will use their imagination and continue the text. This task aims to highlight the ability to read and understand a text of students with disorders from the attention deficit and hyperactivity spectrum.

*Picture composition* is another assessment task. It is one of the activities with the best results in evaluating speech development, speech fluency, the ability to organize and formulate sentences correctly and in noticing details that attracted attention.

*Rey complex figure test* is designed to test planning and organization that are deficient in students with disorders from the attention deficit and hyperactivity spectrum. The figure from this task is a complex geometric route that has several properties: the absence of an obvious significance, easy graphic achievement and a pretty complicated assembly structure in order to ask for a perceptive, analytical

and organizing activity. This task consists in copying and then recalling a complex figure. Copying the Rey complex figure shows student's graphic and motor organization capacity and his visual and spatial abilities, as this reproduction can be achieved only if there is a certain organization, significance and report determined by the knowledge stored in memory.

*Tower subtest* (Korkman, M. at al, 2005) "assesses the executive functions of planning, monitoring, self-regulation and problem solving. The child must take into account respecting some rules under time constraints." The target area is attention / executive functions - central elements in the neuropsychological assessment from Nepsy tests battery.

The neuropsychology of development uses the term *executive functions* to designate the use of planning and flexible strategies (Denckla, 1996), the ability to adopt, maintain and transfer cognitive sets, to use structured search strategies, in order monitor performance and correct errors, the ability to resist or inhibit the urge to respond to issues that are important but irrelevant in the task (Denckla, 1996, Pennington, Groisser and Welsh, 1993). These components of the executive functions interact, direct and modulate attention processes, including maintaining an optimal neurophysiologic activation and vigilance, the search, selection and attention focus on relevant information from a wide range of stimuli.

#### *Description of the psycho-pedagogical intervention program*

The intervention program was conducted over eight weeks and implemented by the classroom teacher. At the end of each week were distributed materials for the following week's activities. Difficulties encountered in the application of a certain technique were discussed with the teacher. The intervention consists in a set of development and consolidation techniques of general organizational skills in classroom activities, in *Language and communication* curriculum. During the program new techniques were introduced and previous ones were consolidated. Cumulative consolidation was achieved. In accordance with the finding, the interventions were focused on consolidating the behaviors showing deficits.

During the intervention were used worksheets, calendars, agenda, wall clocks, etc. Necessary materials and weekly progress monitoring records were compiled, multiplied and provided by the experimenter.

Techniques that form the intervention are grouped into several categories addressing different aspects of the organizational skill. Thus, there were proposed several planning techniques, prioritization techniques, self-monitoring techniques, techniques for preparing materials for school.

1. "Be an ace" - is an acronym that is meant to remind students they can be successful in school if they approach tasks in an organized manner. Students receive a card detailing the content of the acronym.

This technique was adapted from the technique "Think Smart" from "Teaching Kids with Learning Difficulties in the Regular Classroom" (Susan Winebrenner, 1996).

In the first meeting was discussed the meaning of the phrase “Be an ace” and the content of the acronym. Students learned the acronym as well as its content. Once automated, it was used at the beginning of each activity. These words reminded them to think positively, creatively, to be organized, to have materials prepared and write down important information.

2. Use lists to organize:

- List with the materials needed the following day or for a specific activity in *language and communication* curriculum

- List with the requirements for the following day

Students were presented with a list - model, which contains materials that will be needed in that day in the *language and communication* curriculum. The teacher shows how to use the list and ticks off the materials checked. The student will design with the teacher another list of materials needed that day. As they enumerate them, they will write them down one below the other. The teacher will ask the student to tick off the list the materials he has and needs for the first class. The reward for carrying out this activity was a notebook to be used at home.

3. Perhaps the most important technique is using a weekly calendar. Initially, in the classroom will be posted a calendar for every month. This calendar will be an interactive one, as it will be filled with events, in collaboration with the students. There will be highlighted the current week, current day and will be marked the schedule and other important events of the day: What month are we in? What day is it today? What date is it today? Let’s locate the date on your calendar! What classes do we have today? Let’s write them down in the notebook! Did something new emerge? For example, if the student is awarded a red star, this change is signaled and the event is marked in the calendar.

The next step consists in compiling student’s own timetable, completing a calendar page for the current week.

The student will be assigned the role of reminding colleagues at the end of each day, about the classes of the next day, homework to be done and materials needed the following day.

### **3. Results**

The association between executive functioning profile and the performance profile in terms of reading and writing in the case of students with disorders from the attention deficit and hyperactivity spectrum presenting learning difficulties has been analyzed.

#### ***3.1 Correlation tests on variables in pretest***

Correlation matrix presents Pearson coefficients obtained from the six associated instruments (Rey complex figure test: copy and recall; Tower subtest, L’Alouette test, reading comprehension; picture composition) in pretest (Table 1).

**Table 1.**

Correlations between the results on all 6 variables, in the pretest measurement

		Rey-copy	Rey-recall	Tower	L'alouette	Reading comprehension	Picture composition
Rey-copy	Pearson Correlation	1	,657**	,654**	-,040	,480**	,251
	Sig. (2-tailed)		,000	,000	,802	,001	,109
	N	42	42	42	42	42	42
Rey-recall	Pearson Correlation	,657**	1	,585**	,058	,276	,136
	Sig. (2-tailed)	,000		,000	,715	,076	,390
	N	42	42	42	42	42	42
Tower	Pearson Correlation	,654**	,585**	1	-,132	,329*	,134
	Sig. (2-tailed)	,000	,000		,403	,033	,397
	N	42	42	42	42	42	42
L'alouette	Pearson Correlation	-,040	,058	-,132	1	,444**	,457**
	Sig. (2-tailed)	,802	,715	,403		,003	,002
	N	42	42	42	42	42	42
Reading comprehension	Pearson Correlation	,480**	,276	,329*	,444**	1	,616**
	Sig. (2-tailed)	,001	,076	,033	,003		,000
	N	42	42	42	42	42	42
Picture composition	Pearson Correlation	,251	,136	,134	,457**	,616**	1
	Sig. (2-tailed)	,109	,390	,397	,002	,000	
	N	42	42	42	42	42	42

Results from two tasks of the Rey complex figure test (copying and recall) are correlated ( $r = 0.65$ ,  $p < 0.01$ ), students with good results at Rey-copy task tend to reach the same level at Rey-recall task; also the results from Rey complex figure test correlate with results from Tower subtest ( $r = 0.65$ ,  $p < 0.01$  and  $r = 0.58$ ,  $p < 0.01$ ). Therefore, results on the three neuropsychological tests are consonant and highly correlated.

Variables measuring school performance correlate positively ( $r = 0.61$ ,  $p < 0.01$ ), students who perform well on reading comprehension tend to have good results at picture composition test, and also at L'Alouette test, which measures reading fluency ( $r = 0.45$ ,  $p < 0.01$ ). Related to our initial hypothesis, the one concerning the way in which the executive functioning profile, highlighted through neuropsychological tests, relates to school performance in reading and writing tasks, one can say that this is done differently. The results of Rey complex figure test-copy correlate positively with those of reading comprehension ( $r = 0.48$ ,  $p < 0.01$ ), in other words, students who had good scores on Rey-copy also had good scores at this variable of school performance.

*Tower subtest* scores correlate ( $r = 0.32$ ,  $p < 0.05$ ) with the results in reading comprehension. There are correlations between the results obtained at L'Alouette test and those at reading comprehension test ( $r = 0.44$ ,  $p < 0.01$ ) and also between results obtained at L'Alouette test and those obtained at picture composition test ( $r = 0.45$ ,  $p < 0.01$ ). In conclusion, in terms of pretest measurements, we can say that:

- The three variables measuring school performance (reading comprehension, picture composition, L'Alouette) correlate positively.
- The results of the three neuropsychological tests (Rey complex figure test - copy and recall, Tower subtest of Nepsy test battery) also correlate positively with each other.
- School performance in reading tasks (reading comprehension) correlates with the Rey Complex Figure – Copy results and Tower subtest results.
- Picture composition and l'Alouette tests do not correlate with the results of three neuropsychological tests.

We can conclude that school performance correlates differently with neuropsychological tests. In order to vary these findings, we want to see what happens to these correlations if we make a different analysis, keeping in mind the grade the student comes from. By controlling the variable grade it can be noticed that academic performances correlate positively with neuropsychological test results, especially in the case of the 3<sup>rd</sup> grade, where the results on reading comprehension test are strongly correlated with results from all three neuropsychological tests ( $r = 0.78$ ,  $p < 0.01$  - Rey complex figure test - copy,  $r = 0.66$ ,  $p < 0.01$  - Rey complex figure test - recall,  $r = 0.79$ ,  $p < 0.01$  - Tower subtest).

Analyzing separately the correlations in the case of students with disorders from the attention deficit and hyperactivity spectrum undergoing a medical treatment respectively those without a medical treatment, a major difference can be seen: in the case of students not benefiting from medical treatment, school performance does not correlate with the results on neuropsychological tests; significant correlations can be observed only in the group of students with disorders from the attention deficit and hyperactivity spectrum receiving medication (results at reading comprehension test and Rey complex figure test - copy:  $r = 0.50$ ,  $p < 0.01$ ).

The same correlations were tested separately on the attention deficit and hyperactivity variable that divides subjects into three groups: ADHD predominantly hyperactive, predominantly inattentive and ADHD - combined type. It seems that the group in which the associations between the results of neuropsychological tests and those of school performance are more common, is the group of subjects with ADHD combined type, in which case the results of reading comprehension test correlate with the results of Rey complex figure test - copy  $r = 0.61$ ,  $p < 0.01$ . In the case of ADHD hyperactive type correlations are missing, and in the case of the inattentive type there are correlations only between the results of Rey tests between each other ( $r = 0.77$ ,  $p < 0.01$ ) and only between the results of reading comprehension and picture composition between each other ( $r = 0.74$ ,  $p < 0.05$ ).

### 3.2 Correlation tests on posttest

The same sets of correlations in the mirror were performed for posttest variables to see if the correlation trends remain. Results showed:

- Positive correlation between the results of Rey complex figure test - copying and school performance variables ( $r = 0.57$ ,  $p < 0.01$  - reading comprehension,  $r = 0.54$ ,  $p < 0.01$  - picture composition).
- Positive correlation between Rey - recall and the results of picture composition ( $r = 0.40$ ,  $p < 0.01$ ).
- Positive correlation between the results of Tower subtest and results of school performance variables ( $r = 0.37$ ,  $p < 0.05$  - reading fluency,  $r = 0.80$ ,  $p < 0.01$  - reading comprehension,  $r = 0.73$ ,  $p < 0.01$  - picture composition).
- Positive correlation between test results of L'Alouette test and the other variables of school performance ( $r = 0.51$ ,  $p < 0.01$  - reading comprehension,  $r = 0.36$ ,  $p < 0.01$  - picture composition).

Correlations were established according to the grades students were in, in the case of posttest measurements. When controlling the *grade* variable, in the analysis of correlations between posttest variables was observed:

- At the level of the 2<sup>nd</sup> grade, positive correlation between Tower subtest results and results to reading comprehension test ( $r = 0.63$ ,  $p < 0.05$ ) and picture composition ( $r = 0.87$ ,  $p < 0.01$ ).
- At the level of the 2<sup>nd</sup> grade, positive correlation between the results obtained at reading fluency measurement test, L'Alouette test, and reading comprehension ( $r = 0.58$ ,  $p < 0.05$ ).
- At the level of the 3<sup>rd</sup> and 4<sup>th</sup> grade several correlations between neuropsychological test scores and school performance.
- At the level of the 3<sup>rd</sup> grade: very strong correlation between the results on Rey complex figure test - copying and the results in academic tasks ( $r = 0.80$ ,  $p < 0.01$  - reading comprehension,  $r = 0.65$ ,  $p < 0.01$  - picture composition), between the results at Rey complex figure test - recall and the results in academic tasks ( $r = 0.77$ ,  $p < 0.01$  - reading comprehension,  $r = 0.68$ ,  $p < 0.01$  - picture composition) and between Tower subtest results and performance in reading comprehension test ( $r = 0.70$ ,  $p < 0.01$ ).
- In the 4<sup>th</sup> grade: strong correlations between Tower subtest and school performance ( $r = 0.91$ ,  $p < 0.01$  - reading comprehension,  $r = 0.89$ ,  $p < 0.01$  - picture composition), between Rey complex figure test results - copying and L'Alouette test results that measure reading fluency ( $r = 0.68$ ,  $p < 0.05$ ) and between reading comprehension test and Rey-Copying ( $r = 0.61$ ,  $p < 0.05$ ).

In order to establish correlations between the results obtained by students with disorders from the attention deficit and hyperactivity spectrum undergoing a medical treatment and those of students not benefitting from a medical treatment, there is an improvement compared to the pretest situation, in the sense that there are not significant differences between the results obtained by students receiving medication

compared with those not receiving medication. There are positive correlations between neuropsychological test scores and school performance in the group benefitting from medical treatment but also in the group not benefitting from medical treatment.

The results at Rey complex figure test - copying, correlate with the results on reading comprehension ( $r = 0.49, p < 0.01$ ) and picture composition ( $r = 0.41, p < 0.05$ ) in students with disorders from the attention deficit and hyperactivity spectrum undergoing a medical treatment, but also correlate in the case of students not undergoing medical treatment with the results at reading comprehension ( $r = 0.58, p < 0.05$ ) and picture composition ( $r = 0.63, p < 0.05$ ).

Results at Tower subtest correlate with those at L'Alouette test ( $r = 0.43, p < 0.05$ ), reading comprehension ( $r = 0.77, p < 0.01$ ) and picture composition ( $r = 0.70, p < 0.01$ ) in the case of students with disorders from the attention deficit and hyperactivity spectrum benefitting from medical treatment and in the case of students not benefitting from medical treatment Results at Tower subtest correlate with those on reading comprehension ( $r = 0.83, p < 0.01$ ) and picture composition ( $r = 0.72, p < 0.01$ ).

There were established correlations according to the type of attention deficit and hyperactivity, although the number of students with attention deficit and hyperactivity disorder predominantly hyperactive / impulsive was quite small (4 students).

Regarding the correlations of variables in posttest in the case of controlling the type of ADHD, we mention that:

- No improvement can be noticed in the case of the hyperactive type, variables do not correlate not even in posttest.
- At the level of inattentive type there are strong correlations between neuropsychological test results and school tasks performance. Results on Rey complex figure test - copy test correlate with results at reading comprehension ( $r = 0.84, p < 0.01$ ) and picture composition ( $r = 0.80, p < 0.01$ ). Results from Rey – recall correlate with the results at reading comprehension test ( $r = 0.72, p < 0.05$ ).
- Correlations exist also in the combined type. There is a strong correlation in the combined type between the results at the Rey complex figure test - copy and reading comprehension ( $r = 0.61, p < 0.01$ ) and picture composition ( $r = 0.47, p < 0.05$ ) as well as between the results at Tower subtest and both variables of school performance (reading comprehension  $r = 0.92, p < 0.01$  and  $r = 0.85$  and picture composition,  $p < 0.01$ ).

### ***3.3 Analysis of the intervention program's efficiency***

T test was used to compare variables: Rey complex figure tests (copy and recall), Tower subtest, L'Alouette test and those vising school performance measured before the intervention (pretest) and after the intervention (posttest).

It was noticed that in the case of all pairs of variables the average between the pretest and posttest increased. In other words, there is a difference between the results, that is there are better scores on all posttest variables compared with the pretest scores. For example the average result on Rey – copy increased from 32.50 to 44.64;



the average results on picture composition (pretest) increased to 48.10 in the posttest. It will be verified if these differences are significant.

For each pair of tested variables was evaluated correlations' value between variables and the significance level. There were observed high correlations between the variables of each pair and the fact that these are significant. For example, the highest Pearson coefficients ( $r = 0.84$  for Rey-copy variable,  $p < 0.01$ ,  $r = 0.95$ ,  $p < 0.01$  for L'Alouette test) show a major difference that occurred in the case of students between the two measurements (Table 2).

**Table 2.**

Correlations between variables and the significance level

	r
Pair 1 Rey copy 1 & Rey copy 2	,848**
Pair 2 Rey recall1 & Rey recall2	,697**
Pair 3 Reading comprehension 1 & Reading comprehension 2	,817**
Pair 4 Picture composition 1 & picture composition 2	,663**
Pair 5 Tower 1 & Tower2	,308*
Pair 6 L'Alouette 1 & L'Alouette 2	,952**

Best scores obtained by students in posttest were not due to random variation but to psycho-pedagogical intervention performed between the two measurements.

T test was repeated on pair samples on these variables, controlling also the variable –grade (students with disorders from the attention deficit and hyperactivity spectrum were enrolled in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> grade).

The results in which was used the variable - grade, showed there are no differences between grades in terms of student's school performance improvement. In other words, results were better for most students with disorders from the attention deficit and hyperactivity spectrum, regardless their year of study.

We used the same test that was employed in the context of controlling another variable to see if there are differences in terms of performance between students benefitting from medical treatment and those not benefitting from medical treatment.

In the case of controlling this variable, results were also conclusive: the results have significantly improved in both groups of students (those with disorders from the attention deficit and hyperactivity spectrum who received treatment and those who did not receive medical treatment), this condition not causing differences in posttest results at neuropsychological tests and at school performance tests.

Another attempt was to repeat the test, controlling the ADHD TYPE variable. With regard to the types of ADHD, analyzing the results divided into three types (hyperactive, inattentive and combined) it can be said that in the case of students from the inattentive and combined group, the intervention had effects in the sense of improving their performance between pretest and posttest.

In what concerns the hyperactive students, there are some variables that register improvements between pretest and posttest, but these improvements are not significant. It is the case of hyperactive students' results in reading comprehension and picture composition (the two school performance variables) and Rey test - copy.

#### 4. Conclusions

The present research was conducted on a group of participants consisting of 55 students with disorders from the attention deficit and hyperactivity spectrum, out of which after detecting learning difficulties (reading, writing) by passing dictation, listening comprehension and reading evaluation tests remained in the study 42 students.

A psycho-pedagogical intervention program was applied for a period of eight weeks, the program being structured on the organizing, self-organizing component, with a general character.

Summarizing, the results obtained show positive correlations between the following variables:

- in pretest: between the variables measuring school performance (text comprehension, image composition and reading fluency); between the results of the three neuropsychological tests; in the case of the 3<sup>rd</sup> grade students, between reading comprehension with all the three neuropsychological tests results; between school performance and neuropsychological tests of students with disorders from the attention deficit and hyperactivity spectrum receiving medical treatment; in the case of students with disorders from the attention deficit and hyperactivity spectrum- combined type, between the results on neuropsychological and school performance tests;

- in posttest: in the 3<sup>rd</sup> and 4<sup>th</sup> grades positive correlations between neuropsychological test results and school performance; in the 3<sup>rd</sup> grade between Rey figure test results and results in academic tasks; between neuropsychological test results and school performance in both treatment and no treatment group; in the case of the students with disorders from the attention deficit and hyperactivity spectrum predominantly inattentive there are strong correlations between neuropsychological test results and school tasks results; between neuropsychological tests results and school performance in the case of students with disorders from the attention deficit and hyperactivity spectrum receiving medical treatment and those not receiving medical treatment.

This means that these variables interact and influence the performance of students with disorders from the attention deficit and hyperactivity spectrum. The partial factors involved influence some learning segments, for example:

- in pretest: in the case of disorders from the predominantly inattentive type of attention deficit and hyperactivity spectrum, correlate only the results on Rey tests between each other and on text comprehension and image composition school tasks; school performance in text comprehension tasks and results at Rey-copy test correlate with results from the Tower subtest;

➤ at posttest: positive correlation between Rey - Copy test and school performance variables (reading comprehension and image composition); between Rey recall test and writing by dictation results between L'Alouette test and both school performance variables (reading comprehension and image composition); at the level of the 2<sup>nd</sup> grade between L'Alouette test results and reading comprehension results; at the level of the 2<sup>nd</sup> grade between Tower subtest results and performance in reading comprehension and image composition; at the level of the 3<sup>rd</sup> grade: very strong correlations between Tower test and reading comprehension results; at the level of the 4<sup>th</sup> grade: strong correlations between the Tower test and school performance (reading comprehension and image composition), at the level of the 4<sup>th</sup> grade: correlations between reading comprehension and Rey-copy test; in the case of disorders from the combined type of attention deficit and hyperactivity spectrum, between Tower subtest results and both variables school performance (reading comprehension and writing by dictation).

At the other extreme lies the lack of correlation:

➤ in pretest: between results at image composition, reading fluency and results at the three neuropsychological tests; between school performance and neuropsychological tests in the case of students not receiving medical treatment and those with disorders from the predominantly hyperactive type of attention deficit and hyperactivity spectrum;

➤ in posttest: in the case of disorders from the predominantly inattentive type of attention deficit and hyperactivity spectrum, which means that these variables do not influence the performance of students with disorders from the attention deficit and hyperactivity spectrum.

In conclusion we can say that in the case of children with disorders from the attention deficit and hyperactivity spectrum, the psycho-pedagogical intervention program should integrate contents and experiences from the set of factors that have an impact on disorders from the attention deficit and hyperactivity spectrum.

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## QUALITY OF LIFE IN EDENTULOUS PATIENTS WITHOUT ANY PROSTHESIS IN THE SANODENTAPRIM PROGRAM

DAN BUHĂȚEL\*

**ABSTRACT.** The overall goal in medicine is prevention, but in dentistry, due to the inefficiency of prophylactic and therapeutic methods owing to various factors and reasons, we find ourselves again in the restorative period. Full edentulous is perhaps the most mutilating pathological state of the stomatognathic system because it disrupts all functions, with consequences for the entire organism. For this reason the ultimate goal of prosthetics is improving the patients' quality of life through the rehabilitation of the stomatognathic system functions and aesthetic restorations.

**Keywords:** *totally edentulous, chewing disorders, psysionomical disorders, phonetic disorders, psychiatric disorders, quality of life.*

**ZUSAMMENFASSUNG.** "Vorbeugung ist die beste Medizin" ist aber in der Zahnmedizin aus verschiedenen Ursachen wegen Ineffizienz von allen prophylaktischen und therapeutischen Methoden in der restaurativen Periode geraten. Totale Zahnlosigkeit und die damit verbundenen morphologischen

Veränderungen der oralen Hart- und Weichgewebe können zu funktionellen, ästhetischen und/oder psychosozialen Beeinträchtigungen des betroffenen Patienten führen. Deshalb die Zahnprothetik ist der Endzweck und Endziel für die Verbesserung des Lebensniveaus der Patienten mittels ästhetische Rehabilitation.

**Schlüsselwörter:** *totale Zahnlosigkeit, Kaustörungen, körperliche Störungen, phonetische Störungen, psychische Störungen, Lebensniveau.*

### 1. Introduction

Total edentulous is characterized by the absence of all periodontal dental units from one or both jaws, with consequent disruption of essential functions of the stomatognathic system: mastication, phonation, physiognomy. The therapy of total edentulous continues to preoccupy specialists everywhere, being considered an area of particular difficulty, as it not limited to the conception and realization of a total mobile prosthesis, but constitutes a true specific therapy which addresses one of the most complex and little known impairments. The onset of total edentulous must be regarded as the beginning of an evolving process of disruption

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of the physiological balance, generated by the constant aging of the anatomical structures of the entire organism, with implications over the dento-maxillary apparatus, an aspect which can cause a permanent stress which places older persons in particular in a state of psychosomatic instability (Jeremia, 1999).

Devin, in 1973, stresses the fact that the mental factor dominated the treatment of total edentulous, a reason which forces the practitioner to research and discover the deep personality of total edentulous in order to intervene efficiently in solving affective and prosthetic problems with a triple aim: mastication, phonation, and aesthetics.

*Masticating disorders* are present in edentulous patients without any prosthesis. The impossibility of grinding food forces them to consume only soft foods, the nutritious effect of the latter decreasing considerably (Negucioiu, 1999). In these circumstances, there appear frequent gastro-intestinal ailments, with the consequent weakening of the organism (Terezhalmay G.T., 1989). The impairment of the digestive tube is also caused by the chronic trauma of the gastric mucosa by food fragments insufficiently broken down and in salivated, which leads to a gastric hyper secretion and an increase in stomach motility. Professor Huțu, in his paper "The Evaluation of the Risk of Malnutrition in the Partial Movable Edentulous With Prosthesis" states that the nutritious needs for persons aged over 50 vary according to the general state of health, their level of physical and intellectual activity, and their level of individual education.

However, calories consumption for people 50-65 years old, of 1800-1900 kcal for women and 2000-2300 kcal for men, is reduced at 65-75 years of age to 1300 kcal for women and 1800 kcal for men. For totally or partially edentulous patients, with or without prosthesis, patients who in most cases are of old age, the supplying of food is closely related to the dental status and the masticating efficiency. The edentulous state reduces the pleasure of eating favorite foods, limits the diet and makes it monotone, eliminates part of the fruits and raw vegetables which contribute their share of mineral salts and vitamins. On long term, such a diet leads to the onset of the malnutrition symptom, with direct repercussions over the stomatognathic system. Almost half of the older individuals frequently present a nutritional risk with the installation of the symptomatology of malnutrition, a risk which is also influenced by the chronic disorders specific for this age group, especially by the degenerative disorders. A diet low in calories, proteins, vitamin A, ascorbic acid, the B vitamin complex, is present in bearers of mobile acrylic prosthesis. The qualitative and quantitative reduction of the diet is often caused by the instability of prosthesis on the prosthetic field, an instability which causes foods not to be fully masticated, and softer foods, richer in high energy releasing carbohydrates, to be preferred in these cases.

Rapidly produced total edentulous sets off a serious *physionomical disorder* by modifying the relief of the small parts of the face, with the deepening of the peribucal ditches, the disappearance of the lips' redness, causing the unsettling apparition of the dominant aspect of aging (Balaceanu, 1998). All these

modifications give a characteristic aspect to the total edentulous of both jaws, marked by the recession of the inferior floor of the face, with the advancing of the chin towards the tip of the nose, an aspect similar to the bird profile. In the case of the slow onset of the total edentulous, the transformation of the partially edentulous patient (especially the subtotal one) with prosthesis into total edentulous does not cause notable physiognomical disorders, unless the last teeth were frontal (Bratu, 2005).

### ***Phonetic disorders***

The mouth cavity has an essential role in the emission of phonetically articulated sounds. Unarticulated phonetic sounds issued through the vibration of vocal chords of the larynx will be transformed at the level of cavities (mouth, nasal, pharynx) in articulated phonetic sounds. In this transformation an essential role is played by the mouth cavity with its comprising elements: tongue, soft palate, hard palate, the lips and teeth. The loss of teeth modifies the phonic tube represented by the mouth cavity, and the tongue no longer encounters the support it rests on when emitting certain consonants called dental. The installation of the phonic modifications is done gradually, but becomes characteristic with the disappearance of all the teeth (Coca I. 1996). Thus, immediately after the extraction, the phonation is gravely affected which necessitates that a prosthesis should be applied immediately in certain cases. In the case of patients without prosthesis, with the passing of time the phonation can be compensated to a great extent. M. Negucioiu explains this fact through the mechanism of auditory feed-back through which the phonetic organs receive impulses from the cortex for the correction of phonetic articulation.

### ***Mental disorders***

The infirmity caused by masticating, physiognomical, and phonetic disorders may affect the state of the central nervous system as well. Psychic modifications appear first and foremost because of the absence of teeth from the arches, which brutally installs the condition of infirmity, visible from the level of the mouth cavity. The psychosomatic aspect of the face involves a state of frustration of the total edentulous patient with their sentimental or daily life. The limiting or absence of the smile in the totally edentulous patient due to the dysphysiognomic aspect which occurs, the repeated hesitations in openly expressing feelings of joy, affection, change the social status of the patient in family, professional, or social relationships (Giddon D., 1980).

The condition of total edentulous involves an infirmity which can often appear brutally, following dental extractions, an infirmity which cannot be hidden or removed immediately. It is felt objectively and subjectively by the patient and noticed by their peers. The lack of professional or social usefulness sets in for the patient or, in some professions, even the retreat into intimacy until the treatment of



the edentulous.

The psychic picture becomes more salient with age, with the diminishing of physical capacity, with the onset or the worsening of certain general diseases, which generally lead to desperation and to a state of interior conflict or conflict with those around.

## **2. Objectives**

In this study I have set out the following *objectives*:

- To analyze the subjective assessments of totally edentulous patients concerning masticating performance;
- To follow the physiological modifications manifested as a consequence for the condition of being edentulous;
- To visualize the way in which the social life of the totally edentulous patient is affected before the prosthesis is applied;

## **3. Sources and Method**

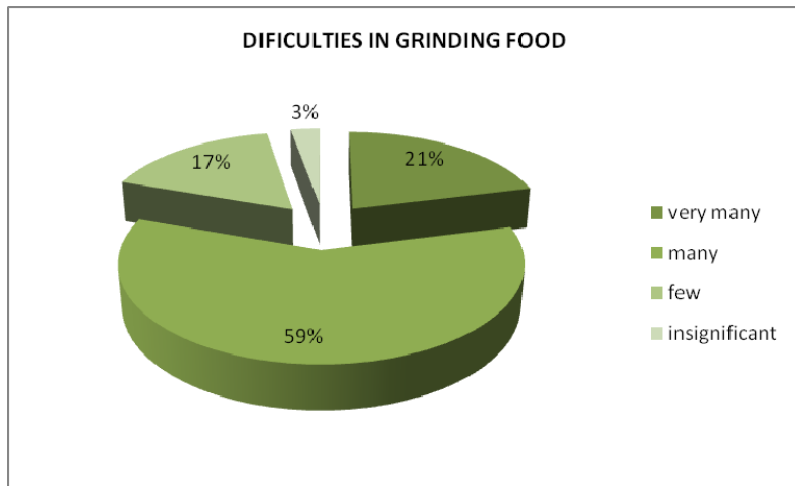
In this study there have been included 71 patients diagnosed with total edentulous, who have registered with the Faculty for Oral Rehabilitation, Oral Health, and the Management of the Dental Cabinet between April 2010 and February 2012. The patients were examined, investigated within the project "PROMOTING ORAL HEALTH THROUGH RAISING THE UNFAVORED POPULATION'S ACCESSIBILITY TO DENTAL SERVICES". Each patient had an observation chart filled out and they filled out and signed an informed consent form for the performance of a medical act as well as a consent form for entering the study. (see attached)

We have included only those patients who were cooperative and who, at the clinical examination presented total edentulous in both jaws which was older than 6 months, without prosthesis. Uncooperative patients have been excluded from the study, as well as patients who have previously worn prosthesis.

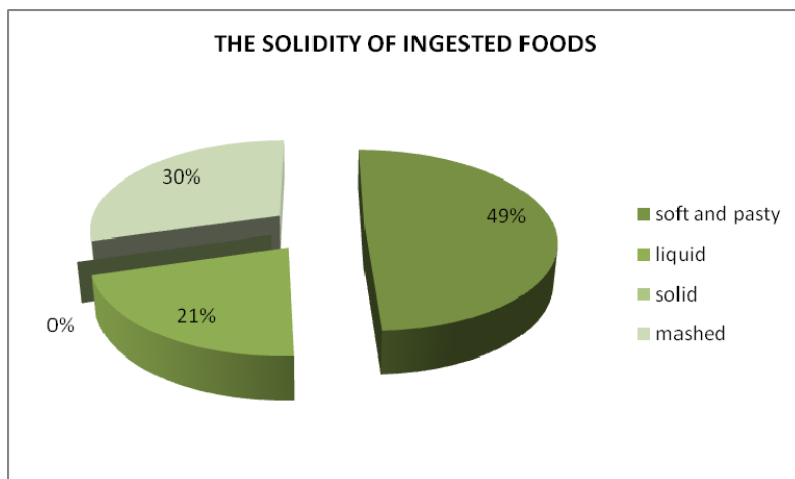
Totally edentulous patients without prosthesis have filled out a questionnaire made up of 23 items. Besides the personal information, the time which has passed from the loss of the last dental units, the questionnaire seeks to capture the patients' perception about masticating, phonatory, physionomical, and psychical disorders induced by the condition of edentulous. All the answers obtained have been written down in a centralized table in order to undergo a statistical analysis. (See attached)

## **4. Results**

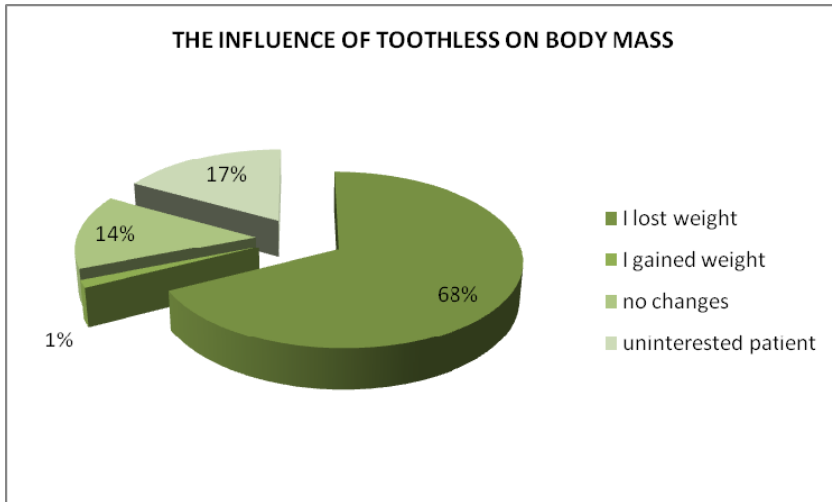
The absence of dental units' causes in most cases an impossible sectioning and grinding of the food. Thus the majority of patients questioned face real difficulties in the act of masticating (15-very many, 42-many). There are also 12 people who do not mention major problems in the act of mastication, and 2 persons assert that they eat properly.



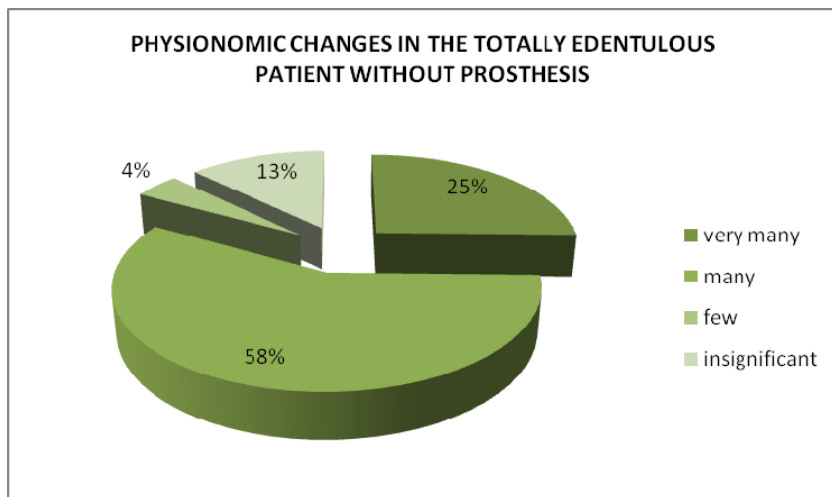
Analyzing the answers to the question concerning the consistency of the foods ingested, one notices that the totally edentulous patients go without solid foods in the act of mastication, "preferring" instead soft, pasty foods (35 cases), mashed food (21 cases).



The majority of patients have lost weight as a consequence of the condition of being edentulous (48 patients). Only one patient asserts that they have gained weight as a consequence of being edentulous, it was probably due to general metabolically causes. There are also patients who assert that they have not paid attention to this aspect or have not followed it.

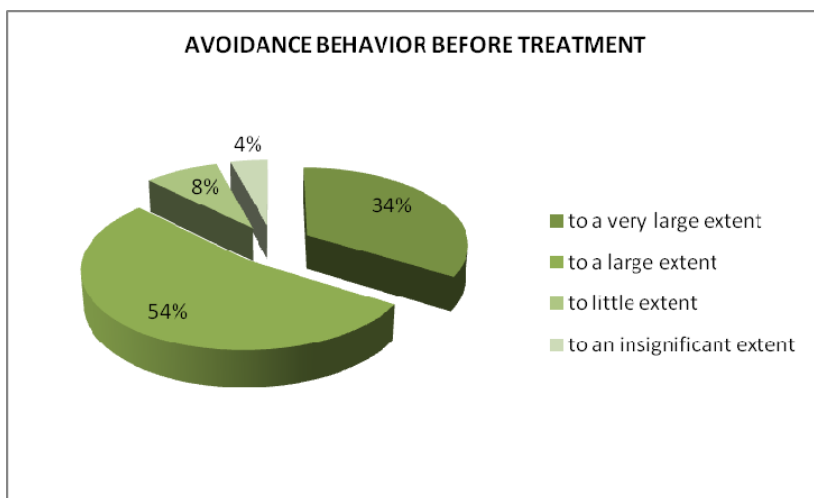


Of the total 71 subjects questioned, 18 perceive to a great extent the unbalance produced at the level of the facial floors, 41 are affected to a great extent by the sudden worsening of the physiognomic aspect. I was negatively surprised to note that there exist patients (9 cases) for whom the physiognomic aspect is not at all important, and 3 other patients are little upset by their own physiognomy.



The loss of dental units has contributed to a great extent to the negative modification of the self image and self esteem. Thus the social life and insertion in the questioned patients' group of friends has been negatively affected very much (15 cases), a lot (35 cases). Also, one's couple life has suffered grave consequences (23 cases), serious consequences (32 cases) due to the edentulous condition.

As a consequence of avoiding these problems raised by the loss of teeth, the patients questioned have developed avoiding behavior to a very large extent (24 cases), respectively a large extent (38 cases).



## 5. Conclusions

The nutritious needs for people aged 50 vary according to their general state of health, their level of physical and intellectual activity, and their degree of individual education. The lack of dental arches makes the incision, crunching, and mastication of the foods impossible. The defective processing of foods will cause traumatic lesions of the mouth cavity mucosa. Consequently, the totally edentulous patient without prosthesis will be obliged to change their diet, using mainly soft, mashed, and liquid foods.

The research stresses the importance of the physiognomy which determines social integration, integration in professional life and the life of the couple; its absence, through the loss of dental units, leads to avoiding behavior on the patients' part. It remains as a challenge for a later study for us to follow up with the appreciation of the quality of life of these patients after receiving the prosthesis.

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## METHODS OF TEACHING-LEARNING-EVALUATING IN HIGHER EDUCATION AND SKILLS TRAINING

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**ABSTRACT.** The present paper aims to address briefly the teaching-learning-evaluating methods used in higher education and how these methods determine and support competences training and development. Thus, we present several methods, such as: teaching-learning methods: lecture, lecture with discussion, heuristic conversation, didactic exercise, problem-solving, brainstorming, computer assisted learning; for assessment: traditional assessment methods: oral, written and practical evaluation; alternative evaluation methods: the continuous and self-evaluation, the essay, the project, the portfolio. Finally we propose a graphical model in which we highlight the relations of permanent interaction between the three components of the educational process – teaching, learning and assessment.

**Keywords:** *competences, competences training, teaching-learning-assessment methods, higher education*

### I. Preliminary considerations

At EU level, the first decade of the third millennium has resulted in remarkable progress in the implementation of an effective extended European area of education by valuing the next approaches:

- **Education** as a fundamental way of personal and social affirmation;
- **Focusing education on developing skills** and ensuring their transferability and thus a better social and economic integration of graduates, by capitalizing on achieved learning in non formal and informal situations;

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– *Assurance of education quality*, its capacity to meet personal expectations and interests of all beneficiaries: students, parents, employers, other categories of beneficiaries and at the same time, the qualities of the various components of the education system.

University education reform measures were imposed to adapt education to social, political and economical changes in recent years, in general, and in response to the educational needs of university professors and the development of science education field.

European Commission and UNESCO reports highlight the major trends of curriculum reforms at European level: education for all, adequate training to the needs of each individual, student-centered teaching and learning, focusing education on skills, integrated approach of curriculum, curriculum relevance for the individual and society, developing desirable attitudes and values, developing critical thinking, authentic assessment of school performance.

At the micro level, concerning the activity in the classroom, these lines of educational policy calls for a better understanding of students to identify learning needs, interests of knowledge and own development and individual training. In this respect, the use of appropriate teaching-learning-evaluating methods is an efficacious and profitable solution; methodological solutions are recommended by priority, knowing the strikingly dynamical and operational character of teaching methods in their role of components of teaching strategies.

In trying to make a primary assessment of the importance and impact on which established methods of teaching-learning-assessment have on student skills development and training, we will make a separate approach of these methods for strictly educational reasons, knowing that in reality, teaching, learning and assessment coexist and reinforce each other.

## **II. A summary of recoverable teaching-learning methods in higher education. Their relevance in the development of skills**

The term *method*, etymologically speaking, comes from two Greek words: *odos* which means "way" and *metha* which means "to" or "toward", as deriving meaning "way, a path to ...". The teaching method refers to the way which should be followed towards achieving the educational goals (Cucos, C., 2002). In other words, by a method we mean all activities undertaken in order to meet certain objectives, in this case the teacher has to ask himself, "What can I do to achieve what I want?"

*A Competence* represents the demonstrated ability to select, combine and use the appropriate knowledge, skills and other acquisitions consisting of values and attitudes for successful resolution of certain categories of work or learning and professional or personal development, under effectiveness and efficiency circumstances.

In the activities carried out in university teaching, the most common method to support teaching and learning is *the lecture*.

The lecture is considered appropriate to achieve the objectives aimed in gaining knowledge, but may be less appropriate in achieving formative objectives.

The advantages of this method of organizing teaching and learning refer to aspects such as students' access to original, new and synthesized information coming from the teacher and who may not be readily available through other sources. Information provided by lecture is well structured and organized.

Referring to the lecture limits we can say that this method, doesn't often give the opportunity to obtain feedback from students, they are mostly passive.

Regarding the skills that a lecture can develop, they are of cognitive impairments, but mainly developed by learning information and declarative knowledge.

A version of the lecture, common in universities, usually alternating lecture, is ***the lecture with discussions***; it consists in insertion of questions during lecture, and the flow of information from teacher to student may become in this way an interactive one.

Following the advantages of the lecture with discussions, they may relate to issues such as active-participatory engagement of students in learning, development of higher cognitive processes involved in learning (analysis, synthesis, comparison, generalization) or provide permanent feedback from both the students and the teacher.

In analyzing the limits of this type of lecture, issues regarding the small amount of time may arise during the realization of discussions. Also, the risk of inappropriate questions or discussion topics may determine possible deviations from the objectives.

The lecture with discussions can develop a series of skills such as: analysis and synthesis skills, organizational and planning skills, interpersonal interaction skills.

Both lecture and lecture with discussions can be framed, methodologically speaking, in the category of ***expository teaching methods***. Expository methods are assigned with *heuristic conversation* and *teaching exercise* in the category of *traditional methods*, *classical methods*, whose importance in achieving the pedagogical competence models we will describe below together with *modern methods*, such as: *questioning*, *brainstorming* or *scheduled training*.

***Heuristic conversation*** is a dialogue that takes place between teacher and student, prompting the student through a set of questions that ultimately lead to epistemological truth. By this method, students are urged to make analysis of their own knowledge and to identify links between them. Connections between the held information determine the acquisition of new knowledge. A promoted concept in education refers to that if a question is a tool in knowing; practically, it is the beginning of knowing and development, and thus true knowledge is not within the answer, but in asking questions and relentless pursuit of answers, which in turn arise other questions, which is actually a chain reaction.

*The advantages* of heuristic conversation consist of indirect intervention of teacher which fosters interactivity, student initiative and spontaneity, also encourage conversation, stimulate motivation for learning and provide promptly feedback to the teacher on effectiveness of educational objectives.

Heuristic conversation can have *limits* at the same time, such as time allocated for a course that may obstacle the conversation progress.



*The skills* that heuristic conversation develops are analysis and synthesis, practice and communication skills.

**Didactic exercise** (intellectual type) is a teaching method used to develop deliberately some mental operations with the purpose of purchasing or building knowledge, acquiring skills, abilities or competences.

Competences that can be developed through didactic exercise refer to communication skills and social interaction, and during information technology courses, didactic exercises develop ICT skills.

**Problem-solving** is a complex teaching activity, requiring both students and teachers. The specificity of this method is that the teacher does not transmit information but the most important thing is: creating situations that emphasize difficulties and cognitive conflicts in a certain gradualism, choosing the best time to place the issue during the course, manifesting real interest in solving the issue, the problem, by conducting the process of formulation and verification of hypotheses and the discovery of the solution.

Because of the formative effects, problem-solving can be considered among the most valuable methods of modern didactics. It finds use in all circumstances that can create problem-situations to be solved through research and discovery of new scientific truths. The teacher does not communicate ready-made knowledge to students, but brings them in a research situation, to solve the problem faced. By "didactic problem" we mean either a cognitive conflict or difficulty understanding that the student cannot deal only with involvement and search, in their own research. This is, namely, a special event organized by teacher, in which the students seek to overcome difficulties, gaining knowledge and new learning experiences.

Competences that problem-solving method can develop may be reflexive, but also critical thinking skills. Also this method of teaching enables building cognitive structures, can foster the spirit of exploration and an active style of learning, contributing to the development of transversal competences.

**Brainstorming** is a method that helps to create innovative and creative concepts and ideas. For an efficient brainstorming, inhibitions and criticism will be suspended, meaning that they are not said at that particular time, but are postponed. This way expression will become free and participants will tell their ideas and opinions without the fear of being rejected or criticized. In a brainstorming a concept or an idea is being exposed and every student has to say his opinion on the subject, anything that comes through their mind, including inapplicable ideas, without making value judgments at that time.

*The competences* that can be developed using brainstorming are: communication, social interaction and role skills; this method can also help develop creativity.

**Computer-assisted teaching method.** Use of computers in education is proving to be a necessity under the accelerated development of information technology. For the new generation of students, the concept of computer assisted instruction has become a requirement, considering the avalanche of multimedia information.

The concept of computer assisted instruction can facilitate the transmission of knowledge, but also the application, consolidation, systematization and immediate evaluation of them.

It is obvious that computer-assisted learning method primarily develops ICT competences, contributing to a conscious, active and systematic learning of contents. Also computer-assisted learning leads to the formation and development of various intellectual capacities and skills of individual learning.

It is obvious that for the development of required skills for a teacher it is necessary that in the curricular planning documents to have as many methods of teaching and learning as possible, understanding that these teaching methods should be combined in a manner as more appropriate. During a course of teaching a sequence (lasting on average two hours) you cannot use more than one or two methods, but on a medium or long period is recommended diversification, but also choosing appropriate teaching and learning methods, as this increases the likelihood of attaining designed competences.

In an attempt to systematize the importance of teaching and learning methods, we present below, in a schematic way, the contribution of each teaching method in achieving the pedagogical competences.

Teaching – learning methods	Mainly developed competences
Lecture	<ul style="list-style-type: none"> <li>• Cognitive competences</li> </ul>
Lecture with discussions	<ul style="list-style-type: none"> <li>• Analysis and synthesis competencies</li> <li>• Organization and planning competences</li> <li>• Interpersonal interaction competences</li> </ul>
Heuristic conversation	<ul style="list-style-type: none"> <li>• Analysis and synthesis competencies</li> <li>• Communication competences</li> <li>• Cooperation-work competences</li> <li>• Counseling competences</li> </ul>
Didactic exercise	<ul style="list-style-type: none"> <li>• Methodological competences</li> <li>• Communication competences</li> <li>• Social interaction competences</li> </ul>
Problem-solving	<ul style="list-style-type: none"> <li>• Communication competences</li> <li>• Counseling competences</li> <li>• Role competences</li> </ul>
Computer assisted	<ul style="list-style-type: none"> <li>• IT Competences</li> <li>• Individual learning competences</li> <li>• Analysis and synthesis competencies</li> </ul>

### III. Assessment methods. Customize for higher education

Curriculum design involves also establishing methods for the assessment of competences that are intended to be learned. Competences assessment is in fact an integral part of learning. After teaching was made in order to achieve some competences, it is used that in the end of training sequence or after a learning unit, an assessment takes place to see whether the objectives have been met and for any adjustment of teaching-learning methods, if it is found that targets were not fully achieved.

The new vision of assessment focuses on competences, provides feedback for students and underlies individual learning plans (National Education Law, Article 72, paragraph 1). Assessment centered on competences is regarded as more relevant and profitable, as:

- ***The competence*** is the most important part in educational measurements because ***it is the only organizer of the Romanian national curriculum*** for all levels of education, for all curricular areas and for all disciplines;

- ***the competence has a composite structure, irreducible to knowledge, skills, attitudes or other acquisitions***, an integrated functional structure, a systematical one, which makes simple tools for measurement and evaluation to not be adequate, at least for some competences;

- ***the competence has the property of portability***, which determines the demonstration of having a competence to claim different situational contexts, to solve various tasks related to daily or professional life, more precisely - evaluation in different contexts;

- ***the competence is availability which is translated into performance / results and infers from performance / results***, but are also relevant the used cognitive and metacognitive strategies; so it is necessary that assessment reports on the process too, not only on the learning outcomes;

- ***Competences are found in a variety of types (general, specific, disciplinary, trans-disciplinary)***, which require specific evaluative approaches and a certain level of effort for design and taking the tests and interpretation of results.

In assessing competences we can use several methods, assessment strategies depending on what it is like to evaluate.

From the evaluation methods established in the literature we next summarize:

- Traditional assessment methods:
  - oral evaluation,
  - written evaluation,
  - practical assessment.
- Alternative assessment methods:
  - ongoing evaluation and self evaluation,
  - the essay,
  - the project,
  - the portfolio.

### Traditional assessment methods

*Oral assessment* is based on achieving a conversation, through which the teacher aims to identify qualitative and quantitative student performances. The conversation can be individual, collective or combined.

Oral assessment exploits best the level which competences reached especially through the method of conversation, so it is very important that the curriculum was designed having as the predominant method the one of teaching-learning based on conversation, then the evaluation method to be used should be the oral assessment.

*Written evaluation* is made by some written media embodied in control or testing works. Written evaluation unit is beneficial because it provides subjects for all students, it takes advantage of a large area of knowledge, skills, abilities and also allows results reporting to a single criterion.

This evaluation method can identify the extent to which competences mainly formed by lecture method have been achieved, considering that the lecture method can transmit a greater volume of information and written evaluation can best verify to what extent that knowledge were acquired.

*Practical assessment* is made by practical tests used to check students' ability to apply knowledge in practice, the mastery degree of skills and abilities previously formed.

For example, evaluating pedagogical practice can be achieved through various tutorials, teaching activities (during pedagogical training) or by performing computer tasks.

It is obvious that this method of evaluation verifies the practical skills acquired through teaching-learning methods, such as didactical exercise and computer assisted instruction.

### Alternative assessment methods

*Continuous evaluation*, also known as *formative* or *progress evaluation*, is a kind of indicator for teacher and students, because they show throughout training where partial results are situated to the final results, projected as targets, and allows improving activity (teacher will improve the teaching strategy and the students the learning one).

The main purpose of continuous assessment is to complete or correct learning activity and can be achieved by systematic observation of students' activities, both in the class, but especially during seminars. This evaluation method can be very efficient because it can reduce the distortions in providing marks, in that decreasing importance of final evaluation, the level of objectivity increases, allowing monitoring the students who learn systematically.

A very important part of formative assessment is the self-evaluation, because, as we already mentioned, in formative assessment, the student involvement plays a very important role.

Self-evaluation is an alternative form of assessment, as the learner, the student, self-appreciates, verifies or critically analyzes his own knowledge, skills or abilities. The self-evaluation has also a formative value by allowing the students appreciation of

their performance against stated objectives; of course that a self-evaluation against the objectives is possible only if the teacher communicates the students which are the course objectives, and this way the students can appreciate the level of the expectations scale, which may lead to reconsider their learning activity. By self-evaluation, students are able to check all types of competences, especially personal and professional skills development.

Trying to essence the reason of a modern teaching assessment, we could say that it consists in preparation and supporting of an objective self-evaluation, essential to support learning progression. Involving students and determine their own assessment may have beneficial effects on several levels:

- the teacher acquires the confirmation of his assessments regarding the observed results;
- the student can exercise the role of subject of the teaching action, of participant and co-participant in his own development;
- it can help students appreciate and understand the results of necessary efforts to achieve established objectives;
- it cultivates the intrinsic motivation toward learning.

It may become obvious after considering this assessment method, that ongoing assessment is part of the teaching-learning activity, but it can be used successfully especially in the lectures with discussions, in activities generally based on interactivity, as it is clear that continuous assessment involves interactivity and teacher-student communication.

The essay is a test for assessing the way in which the students have acquired a certain part of the curriculum, such as a more complex problem of a theme. It is made either on a minimal bibliography, recommended by the teacher or on a preliminary investigation, in the latter case, the essay summarizing the results of investigation, performed by using specific methods (observation, conversation, inquiry etc.). When the essay is drawn from the study of some sources of information, it should include opinions of the studied authors, but also their own opinions. It won't be considered as a satisfactory essay the one which summarize or reproduce certain studied works. The essay usually has three to four pages and is used only as part of a portfolio or to grant a partial mark in continuous assessment made during training.

*The project* – is a broader evaluative approach, allowing a complex and nuanced appreciation of learning, helping to identify students' individual qualities. It is a highly motivating form of assessment for students, even if consists of an increased work content – including individual and collective activity outside the faculty. The project is a complex form of assessment that leads to intellectual and practical quality assessment approaches made by students, such as:

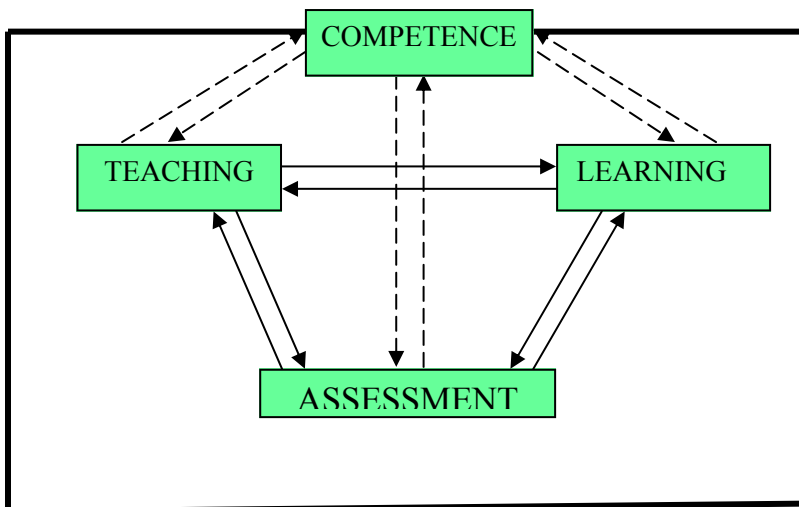
- approaching to scientific methods of investigation;
- finding original solutions for solving problems;
- organizing and synthesizing the material;

- generalization of the problem;
- implementation of solutions to a broader field of experience;
- presentation of findings.

*The portfolio* – is a comprehensive assessment tool that capitalizes the experience and the results obtained by other methods of assessment. It is a form of evaluation which deals with the global process registered by students, not only in terms of acquired knowledge per unit of time, but its attitudes; it is a means to value the individual work of students, acting as a factor of personality development, retaining the student an active role in learning and training.

The portfolio is of two types: learning portfolio and assessment portfolio. Depending of its character, its content is changing also. The portfolio captures and evaluates students in the complexity of their competences, its components being part of the interdisciplinary field.

As mentioned above, the three components of the educational process – teaching-learning-assessment is a continuous relationship of interaction; therefore, in conclusion, we propose a schematic illustration of functional-dynamic relationship between teaching-learning-assessment-training competences:



**Figurative graphic model to highlight the interrelations between teaching-learning-assessment-training of competences**

The graphic model that we propose overtakes the multiple interactions between teaching, learning, assessment, as well as the teleological convergence of their influences in competences training and development. This model can be analyzed and adapted in the context of enhancing the competence paradigm from different analytical and actional perspectives.

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## LEARNING DISABILITIES THROUGH A PROGRAM THAT IS BASED SINDELAR METHOD

KARLA PETER\*, VASILE CHIS\*\*

**ABSTRACT.** One of the problems facing more and more teachers, students and parents of students in learning during primary school are the difficulties which appear as obstacles in the learning activities which can prevent the student to achieve at the same school the other peers (the same age, intellectual level) without any a defect or disability visible and recognizable. In many cases these obstacles are due to not developing or disharmony development of instrumental functions, of which the most important seem to be: visual and acoustic perception, visual attention and the acoustic, visual memory and verbal-acoustic perception serial encoding intermodal motility verbal, visual-motor coordination and spatial-temporal orientation.

This paper aims at demonstrating how instrumental that features students with learning disabilities can be developed using a program that is based Sindelar method, but was adapted to the requirements of the Romanian education system.

**Keywords:** *learning difficulties, instrumental functions, development*

**ZUSAMMENFASSUNG.** Eines der Probleme die Lehrer, Schuler und Eltern die primär Schule besuchen sich mehr und mehr öfter konfrontieren, sind Lernschwierigkeiten, die als Hindernisse in der Lernentätigkeit erscheinen. Diese Hindernisse können den Schuler verhindern identische Leistungen mit den anderen Kollegen zu erhalten (im gleichen Altern, mit der selber intellektueller Niveau) ohne sichtbare Mängel zu haben. In sehr vielen Fallen, diese Hindernisse erscheinen wegen der Unterentwicklung oder der disharmonischer Entwicklung der instrumentallen Funktionen, von denen die wichtigste sind: visuelle und akustische Wahrnehmung, serielle Wahrnehmung, intermodale Verschlusselung, verbale Motilität, visuelle Koordination, Koordination der Bewegung und räumliche und zeitliche Orientierung.

Diese Schreibearbeit schlag sich vor die Weise vorzuführen, dass instrumentallen Funktionen der Schuler mit Lernschwierigkeiten. Diese Funktionen werden entwickelt, durch die Verwendung eines Programmes, der an der Grundlage die Sindelar Methode hat, aber der angepasst war entsprechend den Problemen der rumänische Erziehungssystem.

**Schlüsselwörter:** *Lernschwierigkeiten, instrumentallen Funktionen, Entwicklung.*

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## 1. Introduction

Concerning the definition, characterization and recognition of students with learning difficulties dating from the early 60s, is relatively recent. The term "learning difficulties" was introduced into Anglo-Saxon literature, in 1963. In our country, research concerns learning difficulties were started in the '70s. In studies published in that period, were treated, especially difficulties encountered characteristics of normal and disabled students from various disciplines, the various stages of schooling. Years following definitions were based on comprehensive and generalized learning disorders, as well as comprehensive range of learning difficulties and have made numerous researches on this field. Of all the definitions analyzed it can be concluded that a student has learning difficulties if:

- there is a significant difference between capacities and educational performance achieved;
- progress in learning it is minimal or insignificant, for a period of time;
- it has a disability / incapacity which prevents him to use the educational facilities are made available to children of same age;
- working in schools at a lower level peers;
- it has persistent difficulties in learning in literacy and numeracy;
- it has emotional and behavioral difficulties that prevent frequent and considerable learning of the child or the whole class;
- it has sensory and mental disabilities that require more specialized equipment or services;
- it has ongoing communication and interaction difficulties that it prevents the development of balanced social relationships and form obstacles in the learning process.

## 2. Objectives

- to assess the main instrumental features that may cause learning difficulties;
- to design / design and implementation of intervention programs for children with learning difficulties to develop their instrumental functions affected;
- to record, monitor and compare the results obtained by students in the experimental group and control pretest, posttest and retest.

### *Assumptions*

- Suppose that by introducing a program to stimulate cognitive processes instrumental functions of children with atypical development (learning difficulties), a program that is based Sindelar method, they will improve visible;
- Null hypothesis (Ho): development of instrumental functions of students with learning difficulties are due to chance;

- Independent variable:  
A - type of intervention (cognitive stimulation instrumental functions);  
a0 - control group without intervention;  
a1 - the experimental group cognitive stimulation program under Dependent Variable: X-function tool developed.

### ***Subjects***

The experiment included a total of 60 students with learning difficulties, 30 part of the experimental group and 30 in the control group. All subjects are students in grade III of traditional education, aged between 9 and 10 years, belonging to both sexes, from rural and urban schools.

### **3. Methods**

Psychosocial observation is considered one of the fundamental methods because it requires direct contact with reality and ensures high reliable data, which will then be subject to mandatory processing and interpretation. This observation is recommended to be made by the teacher / tutor, as are people prepared psycho-are co-participants in the collective life, their presence not altering phenomena and events subject to observation. Observation was used during both of educational activities and in the intervals to see how students relate to each other, how to play and how each part in the games offered, willingness to cooperate and help colleagues who have difficulties in both learning and leisure activities, their attitude towards each other, etc..

The method call is used both to see the students experience, belief, feelings, motivations, level of the culture GENERAL. Call can be free, spontaneous or controlled being followed by data processing and interpretation. We used the call in the following situations:

- the relationship with the teachers of the classes in which the experiment was conducted to inquire how much information about students with learning disabilities, about the relationships established in the classroom, how students with learning disabilities are accepted or rejected by group, aided by colleagues in their school work, etc.
- the students in general, people with learning difficulties in particular to find out as much information about them, about their feelings and how they relate to the question facing Color Progressive Matrices Test (CPM) is designed to allow a more accurate measure of the intellectual processes of children aged 4-12 years (i.e. non-verbal intelligence), mentally retarded persons and the elderly. Intelligence test was applied individually to each child with atypical development processes involved in the experiment, the experimental group and control group. Purposes were to exclude mental deficiency of which causes underlying poor school results obtained by these students and we diagnosed as having learning difficulties. Researcher who has applied and interpreted Color Progressive.

### *Matrices test*

Sindelar method (small instrumental identification and treatment disorders in preschoolers and schoolchildren). Instrumental functions are those functions psychic elementary underlying complex mental functions such as language, thinking, etc.. In the second stage of development it is the writing, reading, calculation and adaptive behavior.

Battery of tests developed by Brigitte Sindelar evidence consists of oral and nonverbal. The sample does not show the gender differences, which are administered individually. It is a paper and pencil method which does not require many tools. Sheets, cards and forms are the help in assessing and interpreting the answers.

The sample consists of 19 subtest relating to:

- Differentiation pairs of images - visual differentiation - examining perceived similarities and differences, with 10 pairs of images.
- Differentiation of forms - visual differentiation - measuring sentiment for abstract forms by comparing pairs of images.
- Identify hidden forms - visual discrimination - discrimination ability as follows-fund, in case of abstract forms.
- Differentiation pairs of words - differentiate verbal / acoustic differentiation measure hearing ability of pairs of identical or similar words. The child is charged with discrimination of small differences (When adapting this evidence it should be considered in accordance with the original group of words, phonetic rules of the Romanian language).
- Differentiation pairs of syllables - differentiate verbal / acoustic differentiation measure hearing ability of pairs of identical or similar syllables. As word of syllables, meaning can help children to distinguish sound.
- Identify hidden syllable - discrimination verbal / acoustic. Test measures the ability to hear the word spelling, and ability to find a date in a whole syllable of the word. The child must decide whether to hear a certain syllable in the 10 words heard.
- Making the connection between image and word - intermodal integration, verify that the integration of visual and auditory stimuli, as a result of learning situations. The examiner shows 5 images, and for each image tells the name of the creator, that animal who drew the picture. Child task is to remember to code the name of animal of each image, ie to link the two types of stimuli.
- Making the connection between word and image - intermodal integration. Sample verify that integration of visual and auditory stimuli, as a result of learning situations.
- Save the order of the images - serial visual memory, memorizing check order images.
- Store order geometric forms - serial visual memory, check memorizing order of abstract geometric shapes, unknown.
- Memorizing words - verbal memory / sound. Test checks the memory verbal serial short-Dual, for familiar words.

- Storing syllables - verbal memory / acoustic check verbal memory, short serial Dual, where words (syllables) meaningless.
- Playback of images with words - Memory intermodal serial verbal revocation verifies that a number of images stored in short-term memory.
- Playback of images with words - Memory intermodal serial verbal test verifies that the revocation of a series of images stored in short-term memory. To avoid interference is not intended to be administered immediately after sample 13.
- Repeating words - traction articulator. Phono-articulator motility test measures the child. Since the aim is to examine the pronunciation is not important if the child does not know the meaning of most words.
- Draw lines - visual-motor coordination.
- Identification of forms - visual attention. Test measures the visual focus and shape constancy.
- Identification of a word in the text - acoustic attention, visual attention measure the concentration, if a word that appears several times in a text.
- Imitation of movements - this body / spatial orientation. Sample checks on their body orientation in space by the repetition of simple movements.

The final evaluation is performed using the tree diagram. The color number of correct answers on the branches which are divided by the number of points the student can achieve within each subsample. This can mean all the capacities of the child. Branches "short", are fully colored areas requiring therapeutic intervention. In this case the sample was applied and interpreted by the researcher. We worked with each student individually.

### ***Procedure***

- inventory of data on students (observation, work product analysis, discussions with parents and teachers, medical records);
- analysis of school programs and inventory system minimum requirements that contribute to school success in primary;
- registration of students' school performance, expressed in grades, then transformed into points in the subjects Mathematics and Language Romanian previous year study to compare results from the application of intervention program;
- measuring the intelligence of students with atypical development processes via the Raven Progressive Matrices test Color to exclude causes of mental deficiency that could lead to learning difficulties;
- initial assessment of instrumental functions through Sindelar method to conduct cognitive development program initiated by Brigitte Sindelar, clinical psychologist and psychotherapist of Austrian origin;
- design development program of instrumental functions based on one created by Austrian psychologist Brigitte Sindelar, but adapted to the requirements of the Romanian education system students;

- implementation of the program to stimulate instrumental functions according to the needs of each student, for a period of six months (November 2010-May 2011).

***Experimental design***

The experiment was conducted during the 2010-2011 school year according to the following experimental design:

**Table 1**

**A general experimental design**

<b>Lot</b> \ <b>Stage</b>	<b>Pretest</b>	<b>Experimental Stage</b>	<b>Posttest</b>	<b>Retest Folow-up</b>
<b>Experimental</b>	<i>Experimental Sampling</i> The extent to which groups of subjects fall	Introduction measuring independent variables	Measuring dependent variables	Measuring time evolution of the characteristics analyzed
<b>Control</b>	<i>Diagnosis</i> The same evidence apply to both groups	Non-intervention	Identical in both groups	Apply the same evidence in both groups

***Description of teaching experiment conducted***

Pedagogical experiment conducted was conducted in 2010-2011, the following steps and sequences distinct:

- Ascertain stage completed pretest administration;
- Pedagogical intervention and application posttest phase;
- Retest.

Ascertain stage was conducted between May-November 2010 and held its end pretest administration. Pretest phase was organized and designed in such a way as to establish statistical comparability between experimental and control groups in terms of development of instrumental functions.

Formative experiment was conducted between November 2010 - May 2011 and considered the teaching and educational intervention in the experimental group, while the control group activity was conducted without being influenced by experimental variables expected. At the end of this period was administered posttest, with the main objective comparative monitoring of the evolution school students in the experimental group and control experiments to confirm hypotheses.

Retest phase took place in September and October of the school year 2011-2012, aimed at checking the stability while the experimental results obtained during surgery performed in the previous school year.

For the sake of testing the validity of the necessity imposed by assumptions made for the experiment we designed a formative intervention program held during the school year 2010-2011, applied classes involved in the experiment in the school program.

The experimental program consisted of designing and implementing development programs working poor instrumental functions which can be the basis for learning difficulties arise.

In order to perform optimal experiment was considered a collaboration with school teachers and especially teachers of classes which were samples of subjects, consisting of explicit conditions for achieving the purpose and research, requiring the support and cooperation from their proposed implementation program.

#### 4. Results

**Table 2**

**Comparing the results got with the experimental and control groups at the 19 subtest of the Sindelar sample in pretest and posttest**

	Pretest		Posttest	
	Experimental Grup N=30	Control Grup N=30	Experimental Grup N=30	Control Grup N=30
Subsample 1	t = .298 p>0,10		t = -2,327 p<0,05	
Subsample 2	t = 1,099 p>0,10		t = 3,147 p<0,01	
Subsample 3	t = -1,652 p>0,05		t = -2,314 p<0,05	
Subsample 4	t = .482 p>0,10		t = -4,323 p<0,01	
Subsample 5	t = 1,347 p>0,10		t = -4,207 p<0,01	
Subsample 6	t = .000 p>0,10		t = -2,448 p<0,02	
Subsample 7	t = .355 p>0,10		t = -2,209 p<0,05	
Subsample 8	t = .149 p>0,10		t = .505 p<0,10	
Subsample 9	t = 1,504 p>0,10		t = -1,984 p<0,10	
Subsample 10	t = .229 p>0,10		t = -4,570 p<0,01	
Subsample 11	t = .971 p>0,10		t = -5,645 p<0,01	
Subsample 12	t = .602 p>0,10		t = -4,534 p<0,01	

	Pretest		Posttest	
	Experimental Grup N=30	Control Grup N=30	Experimental Grup N=30	Control Grup N=30
Subsample 13	t = .371 p>0,10		t = -1,891 p<0,10	
Subsample 14	t = .207 p>0,10		t = -4,680 p<0,01	
Subsample 15	t = -1,270 p>0,10		t = 3,659 p<0,01	
Subsample 16	t = .000 p>0,10		t = -13,340 p<0,01	
Subsample 17	t = .314 p>0,10		t = -1,458 p<0,10	
Subsample 18	t = .812 p>0,10		t = -1,756 p<0,10	
Subsample 19	t = .675 p>0,10		t = -2,379 p<0,05	

We note that the average difference obtained during the pretest subjects in experimental and control groups is statistically insignificant in all cases, materiality is greater than 0.05 or 0.10 so we can say that there are no significant differences between the two groups on the pretest stage subsamples method used for evaluating the development of instrumental functions.

In contrast, the posttest in 14 of the 19 cases the results are significant at lower thresholds than 0.05 or 0.01. The conclusion we draw is that in these cases the intervention was effective in children in the experimental group we have been developing instrumental functions affected.

We have but five cases in which materiality is greater than 0.05. It is subsamples 8 (intermodal integration, the connection between word and image), 9 (visual-memory-storing serial order of the images), 13 (intermodal memory-images play with words), 17 (note visual-identification form) and 18 (note sound - identify a word in the text). The explanation for that in these cases no significant differences between the two groups would be a simple and specific activity is probably derived from the I-IV school years, tooth types of exercises students solve them almost daily in various subject areas. Both the Romanian language and in mathematics and science but also in other activities students are placed in a position to make connections between image and word, to identify words in text, identify shapes, images to convey through words. In fact all they are still in kindergarten, for example, have special activities "Story of the images" as based on a series of pictures or text form "Identification information form" that having learned to name and to recognize different types have their identification tasks. At school, during pre-literacy these activities continue and go on throughout the primary. Therefore, although the group never

gained control of specific activities to develop their instrumental functions, they benefited indirectly in school activities. Being independent samples (control group-experimental group) and pairs (same sample pretest and posttest) ANOVA was used to interpret results.

The results of variance analysis are shown in the table below.

**Table 3**

**Differences between pretest and posttest between  
the two groups subsamples of the Sindelar method**

	df	F	p
Subsample 1	1-58	13,139	,001
Subsample 2	1-58	18,227	,000
Subsample 3	1-58	28,609	,000
Subsample 4	1-58	9,257	,004
Subsample 5	1-58	36,679	,000
Subsample 6	1-58	24,788	,000
Subsample 7	1-58	10,038	,002
Subsample 8	1-58	22,071	,000
Subsample 9	1-58	26,673	,000
Subsample 10	1-58	38,781	,000
Subsample 11	1-58	33,840	,000
Subsample 12	1-58	50,091	,000
Subsample 13	1-58	,533	,010
Subsample 14	1-58	19,975	,000
Subsample 15	1-58	14,810	,000
Subsample 16	1-58	136,856	,000
Subsample 17	1-58	4,015	,050
Subsample 18	1-58	3,082	,050
Subsample 19	1-58	9,063	,005

We note that for all samples grouped for differentiation-visual discrimination (subsamples 1,2 and 3), results in the intervention are significant at a threshold lower than 0.01. It follows therefore that in these cases, the perception of differences between images, comparing pairs of images, form-background discrimination, was a successful intervention, students in the experimental group was able to obtain significantly better in the posttest. This will help in the activity of learning to read

If you examine the differentiation-discrimination verbal subsamples (subsamples 4.5 and 6) the results are significant at  $p < 0.05$  or  $p < 0.01$  for the where we can state that the intervention had effect, subjects in the experimental group had net obtained scores superior to those in the control group. As a result, in



the case of these students we should observe the school results generally improved, particularly those in the area curricular area language and communication.

For intermodal integration we took into account evidence that verify that the integration of visual and auditory stimuli, as a result of learning situations (the connection between image and word - subsample 7) the ability to integrate visual and auditory stimuli, as Following a learning situation (the connection between word and image - subsample 8). In both cases the significance thresholds are lower than 0.02% and 0.01% and hence the intervention had the desired effect, in the course of program development functions experimental instrumental group recorded significant increases compared to the control group even if there where 8 subsample pretest and posttest differences between when the same group.

If evidence for visual memory: remembering the order of images (check the student's ability to retain a number of pictures) and save geometric order forms, similar to the previous test, the difference being that this time using abstract geometric forms, unknown, intervention was effective, the results are significant at  $p < 0.01$ . It follows that in order to memorize the pictures or geometric figures, with practice, student achievement improves. This ability helps students throughout the learning activity, much of the knowledge they have acquired them by memory, the first concrete knowledge or evidence-based and later more abstract information.

The results obtained for subsamples on verbal memory are sound in both cases significant at a threshold lower than 1%. We can say therefore that we believe the specific hypothesis and refute the null hypothesis that the chance of error is less than 1%.

If materiality subsample 13 is greater than 10%. Following intervention for this test has the desired effect in this situation is due to hazard. These results might be due to the very characteristics of the sample, aimed at a greater capacity for abstraction that children who have not worked. It is much harder to remember the images without naming them (known in law that the individual remembers memorizing easier what he sees and calls) and then to provide their name and in a certain order. The association is made more difficult in this case than in other situations when hearing some words to recognize and arrange images that are represented.

If 14 subsample results are significant at a threshold lower than 1%, which shows that the performance of students in the experimental group is due to the intervention program introduced by the researcher.

The 15 test measures the motility of phono-articulator of the child, the peioric movements by repeating difficult words. Because the purpose is to examine the pronunciation is not important if the child does not know most words. And in this intervention had no effect, differences between the two groups, experimental and control was significant at a threshold  $< 0.01$ . In other words, students in the control group were managed after development program introduced to repeat a word many more high-difficulty than children in the control group. It helps in all school activities because they must be able to differentiate and discriminate similar words spoken by the teacher or other students to understand the message sent to

them in order to gain information, to communicate. They also must correctly pronounce different words when communicating with those around them, so may be submitted only understood by them.

Sample to measure motor coordination STM resembles the Frostig test samples. The child has the task of drawing lines in a given space without touching the edges. The result for this test:  $F(1.58) = 136.856$ , is significant at  $p < 0.01$ , so we can say that the intervention had the desired effect, the exercises used to develop visual-motor coordination capacity have led to improved student achievement experimental group while no such exercise was that student achievement in the control group remain approximately the same level of development as in the pretest.

Ability to focus attention and visual shape constancy is measured by the subsample with number 17. The child has to find the form identical to that in the model (in our case stars). The result is:  $F(1.58) = 4.015$ ,  $p > 0.05$ . It follows that in this case the intervention had the desired effect, differences between the two groups (experimental and control) beyond the threshold of significance of 0.05. Fact that we did not obtain significant results in these samples can be explained just by characteristics. This is a sample test visual attention, such a paper pencil test the student's task is to find identical shapes (stars) to model a number of other relatively known (squares, circles, triangles). Even if not as a test, the student encounters in everyday tasks such learning activity as early as first grade he must recognize a certain letter or number from a string that contains several such models, must recognize different figures geometry, etc.. Later you will need to recognize symbols, abstract forms. Every day at school the student is forced to find missing syllables or words, to arrange in a specific order to get syllable words with meaning, words to get meaningful results, etc.. At the same he must arrange the numbers in ascending or descending, to find signs to actualize equality, etc.. In activities outside of school children are always put in a position to observe, distinguish, recognize certain elements (from a simple walk in the park they have to recognize objects, persons). Therefore, every child, every time practices his visual attention. Perhaps because of this there is no difference between the two groups involved in the experiment.

Test measures the student's ability to focus sound is the number 18. We note that, in this case as in subsample 17 intervention had the desired effect, results from the two groups beyond the materiality of 0.05. Explanation would be like the previous case, every time, both at school and home or on the street, children use various forms of attention, especially on the visual and auditory (acoustic). They have to differentiate the voice of a family member to others, the voice teacher of children, favorite fellow voice of others, must "hear" approaching car when traveling on streets, etc.. And noise due attention is continually practiced. Perhaps this is why although the results of the experimental group students increased not we talk about a tremendous increase in student achievement compared with the control group.

Last subsample that was worked on was the body schema and spatial orientation. Child seems relatively simple task, he must execute the same movements that you perform an adult. Sample to be easier for small school children results from the application program intervention are significant at a threshold lower than 0.05.

## 5. Conclusions

In the literature (Bruner, 1970, Feuerstein 1979; Fodor and Spelke 1990, Nelson 1996, Geary 1998, Tomasello 2002, Sindelar 1992, 1994), we find quite often that the ideas:

- human beings are changeable, changing society is that people who compose it will be changed;
- an important role in cognitive development it has language that contributes to and transforming experience to meet the demands of society;
- based on learning and behavioral disorders, among other possible causes are found in relatively high percentage (less than 20% of cases) weak instrumental functions or operating disharmonic;
- instrumental functions that must take into account when we meet students with learning difficulties are different forms of auditory and visual perception and discrimination, forms of memory and visual and auditory attention, visual-motor coordination, body schema and spatial and temporal orientation, motility articulator.

If these problems occur when running the chance of learning difficulties occur is much higher. In research conducted on just the ideas I listed above, formulating a hypothesis based on their general and specific: Suppose that by introducing a program to stimulate cognitive processes instrumental functions of children with atypical development (learning difficulties), a program that Sindelar is based method, they will improve visibly. For this purpose we used for testing a very effective tool functions and relatively easy to use developed by Austrian psychologist Brigitte Sindelar.

Based on the pretest results we created a program to correct the instrumental functions, a program that contains both exercises and exercises undertaken by Sindelar adapted or created to achieve personal goals. The posttest and retest instrumental functions were evaluated again using the same method and analyzing the final results can be stated that in most cases the proposed program was effective (as illustrated by significantly lower thresholds than 0.05), improved student achievement for each subsample in part (subsample to test how the development of instrumental functions), except 5 namely subsample 8 (intermodal integration, the connection between word and image), 9 (visual-memory-storing serial order of the images), 13 (intermodal-play memory images of words), 17 (note visual-identification form) and 18 (note sound - identify a word in the text), which can be explained quite simply just by the specific school activities and types of exercises taking place daily in school activities

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## IMPLICATIONS OF PROFESSIONAL STRESS IN THE SCHOOL ENVIRONMENT - A COMPARATIVE STUDY

DENISA MANEA \*, CRISTIAN STAN\*\*

**ABSTRACT.** Considered to be a real threat to the modern world, occupational stress manifests a special interest regarding the teaching profession exercised in distinct school environments, respectively mass education and special education. Three instruments were used in the comparative study: the JSS questionnaire to measure professional stress (C.D. Spielberg, Ph. D. and P.R.Vayg, Ph. D), the Job Satisfaction Survey Global, (1999, Lamond & Paul E. Spector) and a questionnaire to measure the group's cohesion-constructed by ourselves. The results showed the existence of a higher degree of professional stress in teachers from special education systems than in mass education, the professional satisfaction being inversely proportional to professional stress. The higher percentages registered in the evaluation of the teachers in mass education as compared to those in special education can be explained by the level of professional training, the teachers' expectations, the work employment type as well as the time allocated to preparation.

**Keywords:** *occupational stress, professional satisfaction, stressors, eustress, distress, adaptability, internal motivation, external motivation, performance.*

**ZUSAMMENFASSUNG.** Stress am Arbeitsplatz ist eine der Gefahren der modernen Welt. Unser Artikel konzentriert über die Existenz von Unterschieden zwischen Stress in der Regelschule und Sonderschule. Um vergleichende Studie zu erreichen verwendeten wir drei Instrumente: ein Fragebogen zur beruflichen Stress JSS (CD Spielberger, Ph.D. und PRVayg, Ph. D.), Arbeitszufriedenheit Fragebogen Job Satisfaction Survey messen - Global, (1999, Paul Lamond & E. Spector) und ein Fragebogen an Zusammenhalt der Gruppe von uns entwickelten messen. Die erhaltenen Ergebnisse zeigten die Existenz einer höheren Index der beruflichen Stress bei Lehrern in Regelschulen als in Sonderschulen, während der Index der Zufriedenheit am Arbeitsplatz in der Sonderpädagogik höher war als in der Regelschule ist die Zufriedenheit am Arbeitsplatz umgekehrt Stress. Höhere Raten in selbst Lehrer in Regelschulen aufgenommen zu denen in der Sonderpädagogik finden ihre Erklärung in der Ausbildung verbrachte Lehrer Erwartungen, Art der Beschäftigung und die Zeit Training.

**Schlüsselwörter:** *Stress am Arbeitsplatz, berufliche Zufriedenheit, Stressoren, Eustress, Ängste, Anpassungsfähigkeit, innere Motivation, externe Motivation, Leistung.*

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Stress was considered to be an actual issue of the contemporary world, “the disease of the XXth century” (Baban, A., 1997), responsible for generating increased pain, incomparable at the level of modern medicine.

Initially under the name of general adaptation syndrome, the concept “stress” was introduced by Hans Selye and refers both to the aggressions manifested upon the body (stress agents) and to their reactions to aggressions (Selye, H., 1984).

There is also a distinction between eustres (active means of reaction, the state of a person capable to identify the necessary resources in controlling the situation they are confronting with) and distress (passive reaction means, showing helplessness and negative reactions occurring in a hard to control situation.) Stress can thus be defined in most of the specialized writings as the conjunction state resulted from the action of the stressing agent and the body’s capacity to adapt, the rapports that appear between these two elements.

Job stress is defined as a pluri-causal and multidimensional phenomenon, reflected in the psycho-physiological responses of the individual, in a specific work situation, a phenomenon manifested by the lack of balance between work-imposed requirements and the objective or subjective perception that one uses in order to handle the situation. The job stress is one of the most serious threats of modern life. (Andreescu, 2006). The effects of job stress is one of the most serious threats of modern life and they are felt by every individual according to his/her biographic particularities, his/her personality features, his/her attitude to life, his/her behavioral style and the need for self-accomplishment. For instance the International Workforce Organization estimates that job stress causes a 10% loss in a country’s GDP. The statistics Bureau of Labor in the USA names the effects of job stress as neurotic reactions to stress, estimating that this causes \$300 billions yearly loss due to absenteeism, productivity decrease, and replacement of the staff, accidents, direct medical expenses, legal expenses, medical insurance expenses and employee’s compensations. We wish to mention in this context the fact that, as shown in the above source, these losses basically surpass the total net profit of the first 500 American corporations. ([www.wall-street.ro](http://www.wall-street.ro)).

Teachers are part of the category of people whose profession includes high levels of stress. Throughout time, people have developed various mechanisms to face stress in a preventive or adaptive manner, in an attempt to ensure well-being, physical and mental comfort that is necessary to a harmonies, satisfaction and performance generating function. The Latin motto “Mens sana in corpore sano” can be extended to the whole teachers’ category as a slogan of the group.

The comparative study was made at the level of teachers in special and mass education from Beclean, Bistrița-Năsăud county. The subjects were selected from two school units, based on a multi-level random selection. In the selection of the subjects with two constituted groups: Group A-teachers-special education, Group B-teachers in mass education, we took into account the elimination of an external variable that could have influence the results and leads to an ineloquent comparison.

These were: gender, age, marital status, professional training level. The number of subjects in each group were the same, 24 out of which: 20 women, 4 men; age: 7 between 20 and 30 years old, 10 with ages 30-49, 7 in the 40-50 category; marital status: 8 singles, 14 married, 2 divorced; professional status: 4 teachers having medium studies, 20 teachers having superior education. We can mention that the participation of the subjects to the experiment was freely consented; the verbal agreement of each participant ensuring the benefit of an honest expression, and on behalf of the evaluator, there was confidentiality, thanks and appreciation for the support.

The utilized instruments were:

1. The JSS survey for measuring professional stress, elaborated by C.D. Spielberger, Ph.D. and P.R.Vayg, Ph. D. Part A in the questionnaire measures intensity and Part B frequency. The third page of the questionnaire consists of 36 items that are evaluated on a scale 1-6, respectively: 1- total disagreement, 2- moderate disagreement, 3- slightly in disagreement, 4-slightly in agreement and 6- highly in agreement. The high values don't always indicate high stress but the other way around: i.e. "I consider I am paid in accordance to the work I perform" and rather the appreciation system that indicates high stress is the minimum value 1- total disagreement. We used the third page in the JSS survey to make a comparison between professional satisfaction reported to occupation (workplace) and professional satisfaction reported to profession. (JSS Global)

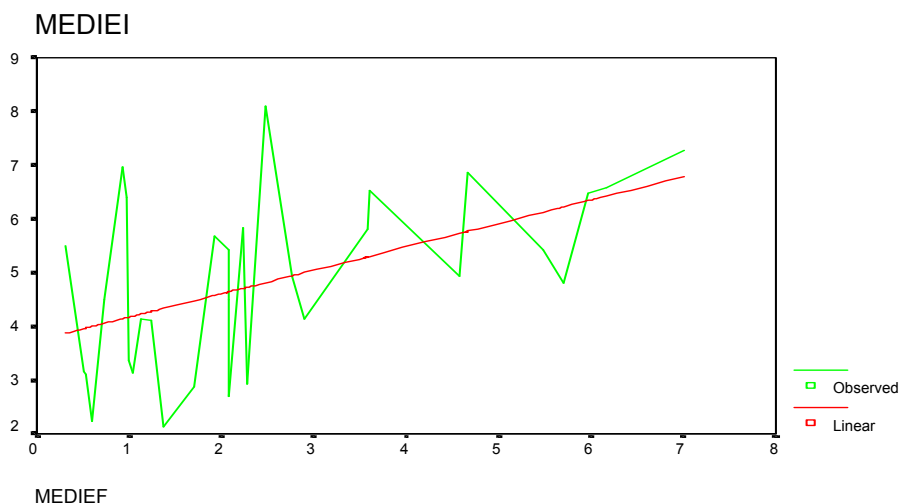
2. The Satisfaction Survey – Global, 1999, Lamond & Paul E. Spector, aims at evaluating (measuring) the degree of content in relation to various work aspects. It uses indexes such as: gender, salary, other monetary benefits, collateral benefits/ other forms of benefits, supervising/control, recognition/appreciation, nature of work, actual work volume, colleagues, resources, training, development and professional improvement, promotion, work safety (of workplace), physical conditions, rules and procedures, work in general, the organization in general. We used this questionnaire to measure professional satisfaction as the operationalisation of well-being was accomplished through professional satisfaction. This scale has items evaluate from 1 to 6 on the Likert scale, which accounts for the expression of the force of feelings. Some items ask for a reverse score. High or low scores were rendered so that high numbers can indicate high job satisfaction.

3. The questionnaire for group cohesion measurement- 4 questions where the answer led to setting group cohesion indexes. Considering the implications of professional stress as multiple ones, we deemed that the number of choices, respectively of rejections would be sufficient. The answer to the questions asks for a numeric expression of the choices and rejections. We avoided obtaining evasive and incorrect answers, which would have happened if the questions had solicited to include in the answer nominally the chosen/rejected colleagues.

The questionnaires applied to the two samples were post modified and a database was initiated in SPSS.



Job stress, measured by the two sets of questions in the survey, on Lickert scales, was quantified in a new variable using the option data reductions in the statistics menu. The same procedure was applied both for professional satisfaction and workplace satisfaction. The direct and inverse rankings were pre-established; hence we used the addition procedure of each individual's scores in the sample. We tried to establish relations between professional stress and professional satisfaction at the levels of the two samples. by estimating the significance at the level of the provenance schools of the subjects. The relation between the intensity of stress and the frequency in producing stressful events (internal validation of the questionnaire) is shown in the results below:  $r = 0,519$ ,  $p < 0, 01$ .



**Figure 1. The relation between stress intensity and frequency of stressful events**

One can easily observe the fact that the appreciation of events as stressful can also take place in the situation in which they are produced at a lower frequency. Nonetheless, the relation is not inverse; the correlation coefficient 0.519 of the two averages being significant at a probability level of 0.01.

To determine the relation stress-professional satisfaction a stress calculated index was built, encoded MEDSTRES to a sample made of 31 subjects. Initially, the survey was applied to a number of 48 persons, but due to numerous completion errors, the volume of the final sample was adjusted with the maintenance of representativity. In our sample, the average for MEDSTRES is situated below the average level of the test's reference (items were evaluated on a scale with 9 levels, the average value being 5). In determining the significance of the difference between the sample average and the test average and the extrapolation at the population level where we extracted the subjects from are shown below:

**Table 1**

**Description of MEDSTRES indicator**

Indicator	Volume of sample (N)	Average	Standard error	Standard average error
MEDSTRES	31	3,7094	1,5469	0,2778

**Table 2**

**ANOVA results for the difference of the MEDSTRES average indicators**

	Reference test average = 5		
	T	Number of liberty degrees (df)	p
MEDSTRES	-4,645	30	,000

The test value ( $t = -4,645$ ) and the significance threshold is significant. By comparing the stress level on the two sub samples) mass education and special education= significant differences were obtained.

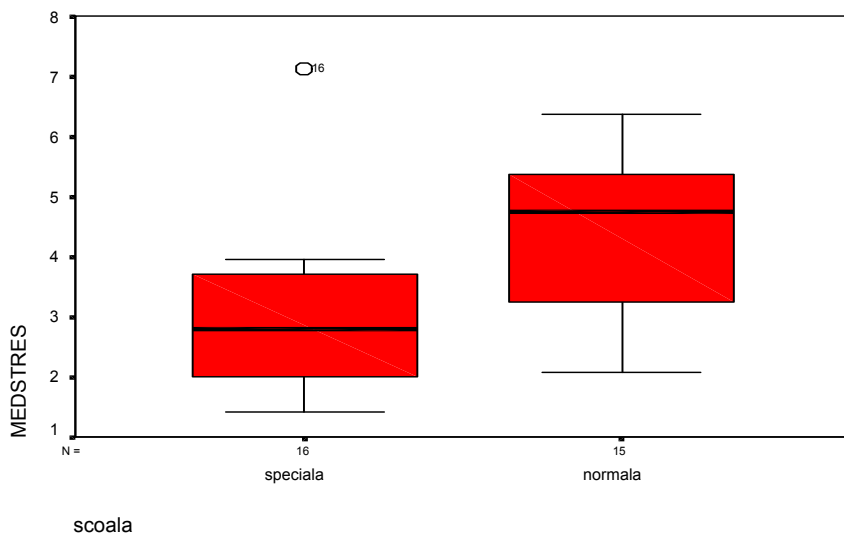
**Table 3**

**Average values of stress on sub samples**

	Number of subjects	Average	Standard Error	Standard average error
Special education	16	3,03	1,37	0,34
Mass education	15	4,42	1,43	0,36
Total	31	3,70	1,54	0,27

By applying the statistic procedure of intra and inter group (ANOVA) the result was, by a 99% probability ( $F = 7,648$ ,  $p < 0,01$ ), that the difference between the two samples is significant and it can be found also at the level of the schools where subjects come from.

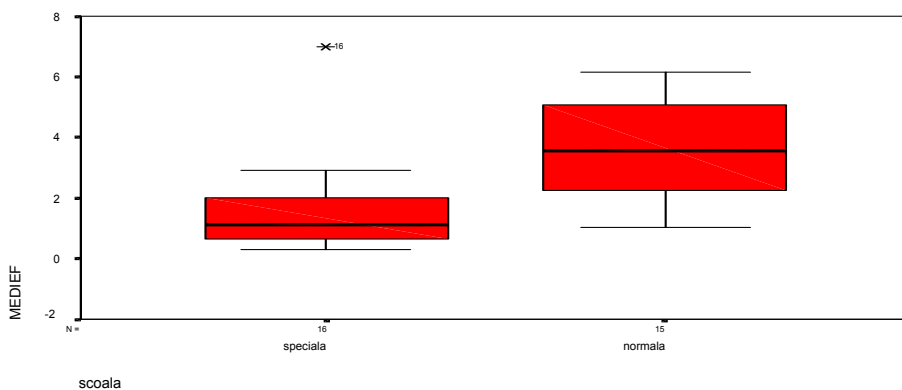
The medium stress level can be easily observed also in the figure presented below:



**Figure 2. Sub sample stress level**

In other words, for teachers in special education there is a reduced level of stress as in mass education subjects.

The general level of stress in special education is lower than in mass school due to reasons that are shown in the qualitative data analysis. The sample for special school reflects in a high proportion its characteristics: homogenous staff, collaboration between the individuals, favorable work environment etc. These results are supported by the following figure, where there is a presentation of the frequency in the stressful events in the two samples.



**Figure 3. Frequency of stressful events (MEDIEF) on sub samples**

The calculation of the professional satisfaction index and the difference estimation at the level of the two samples is presented as follows:

**Table 4**

**Description of the job satisfaction indicator (MEDSATIS)**

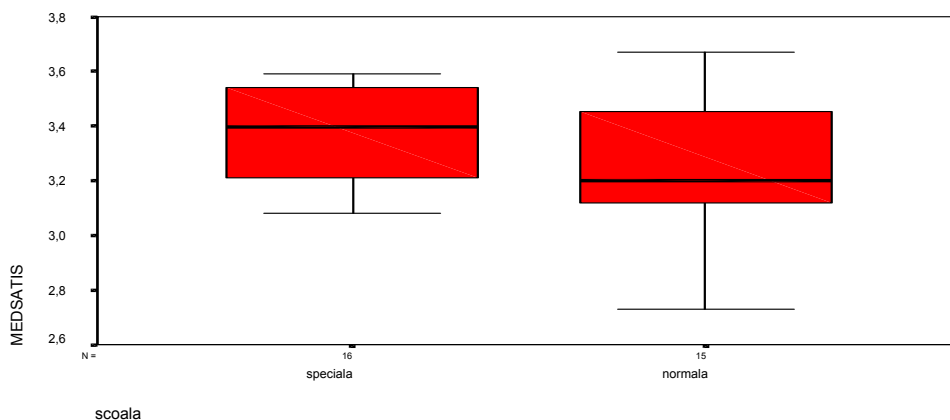
Indicator	Volume of sample (N)	Average	Standard error	Standard average error
MEDSATIS	31	3,30	0,24	4,429E-02

**Table 5**

**ANOVA results for the difference of MEDSTATIS average indicator**

	Test reference average = 5		
	t	Number of liberty degrees (df)	P
MEDSTRES	-38,293	30	,000

Job satisfaction is significantly lower (3,30) than the reference average (5). At the level of the two sub samples job satisfaction is different, as shown in Figure 4.



**Figure 4. Average level of professional satisfaction (MEDSATIS) on sub samples**

The difference of the job satisfaction average indicators on the two sub samples was appreciated by ANOVA. Value  $F = 2,92$ ;  $p > 0,05$  ( $p = 0,09$ ) indicates the fact that we cannot reject the nullity hypothesis (job satisfaction on sample does not differ from professional satisfaction in the two schools), sub samples representing suggestively the provenance population.

**Table 6****Average values of the job satisfaction on sub samples**

	Number of subjects (N)	Average	Standard error	Standard average error
Special education	16	3,37	0,18	4,530E-02
Mass education	15	3,22	0,28	7,448E-02
Total	31	3,30	0,24	4,429E-02

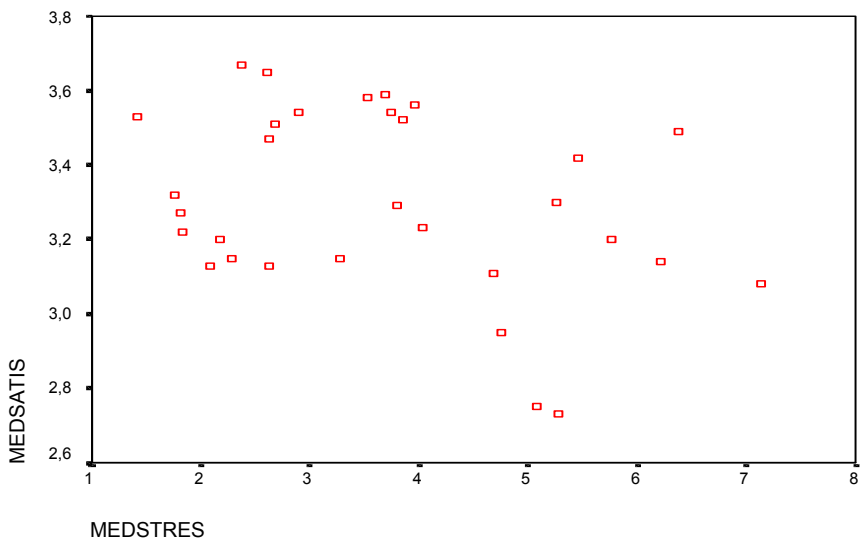
The difference of sub sample averages suggests that there is no linear dependent between the institution type (normal schools, special school) and professional satisfaction, and there are other factors that determine the differentiation of the school from the point of view of job satisfaction. The job satisfaction measurement survey reported in the workplace brings additional information to explain the job satisfaction indices. The sample average (3,64) is significantly different ( $t = -14,33$ ;  $p < 0,01$ ) from the reference average (5).

**Table 7****Average values on sub samples for professional satisfaction reported to job (MEDS)**

	Number of subjects	Average	Standard error	Standard average error
Special education	16	3,51	0,62	0,1553
Mass education	15	3,78	0,37	9,661E-02
Total	31	3,64	0,52	9,452E-02

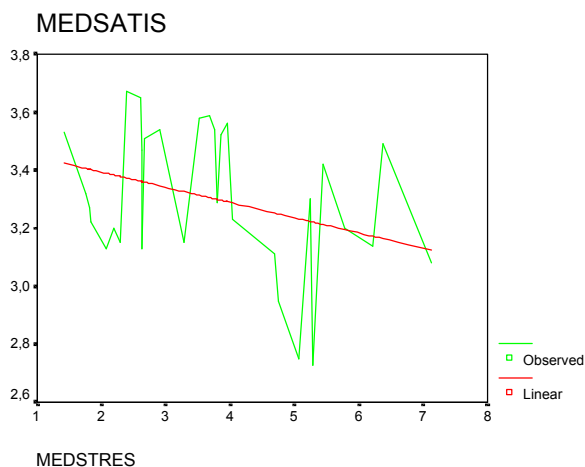
An additional piece of information can be obtained from the ANOVA interpretation for the variable „professional satisfaction in workplace” (MEDS). In this case, the same as with the previous satisfaction test, there are no records of significant difference between the averages of the two sub samples ( $F = 2,08$ ;  $p > 0,05$  ( $p = 0,15$ )). From the data shown above we can say that workplace satisfaction and professional abilities form a whole that leads to the affirmation of competences, hence professional satisfaction.

To establish the relation between stress and professional satisfaction the regression analysis has been used. The data refer to the whole subject samples (31 persons).



**Figure 5. Distribution of indicator professional satisfaction and stress scores**

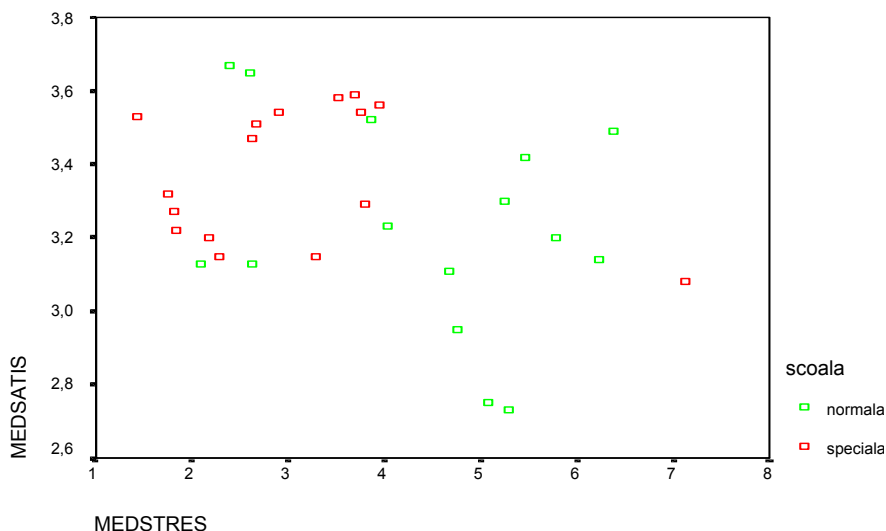
The form of the point cloud indicates the existence of a negative correlation between stress and satisfaction ( $r = -0,33$ ;  $p = 0,04$ ), specifically, the more the stress level increases, the more professional satisfaction decreases. Hence, it can be said that job satisfaction is 85% determined by stress.



**Figure 6. Regression line (professional satisfaction and professional stress)**

The general form of the regression line indicates the existence of negative correlation between stress and job satisfaction at the level of the sample.

The regression analysis on sub samples indicates the means of relating stress and job satisfaction at the level of mass and special education.



**Figure 7. Distribution of professional satisfaction and stress indicator scores on sub samples**

One can observe that in special education system the cases in which decreased professional stress determines a higher professional satisfaction are more frequent, ( concentration of professional satisfaction at a higher level and avoiding low satisfaction situations), while in normal education systems the dispersion of the point cloud renders the model of the whole sample.

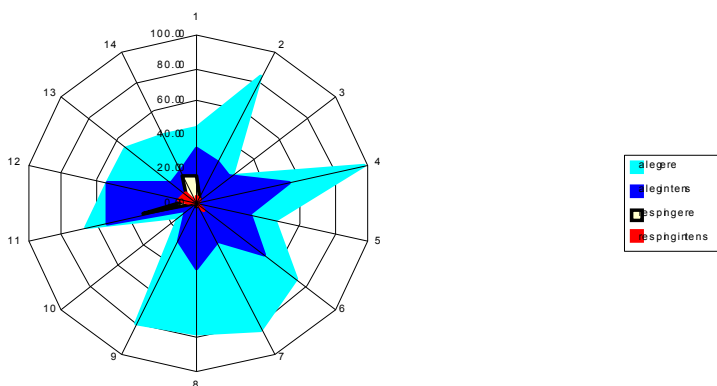
By putting the data in a table pattern (bifactorial plan-2 x 2) we have a clearer image of the results of the comparative study:

**Table 8**

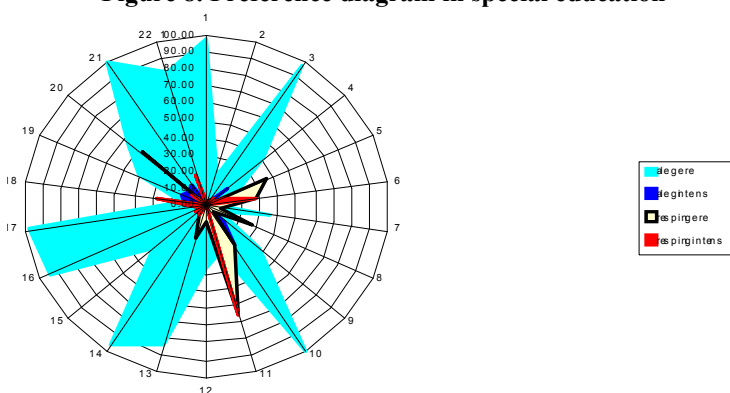
**Average values on sub samples regarding stress and professional satisfaction**

	Special education	Mass education
Professional stress	4,42	3,03
Professional satisfaction	3,22	3,37

The results in the „Survey-group cohesion” complete the explanation of the relation between the two indicators (stress and professional satisfaction) on sub samples.

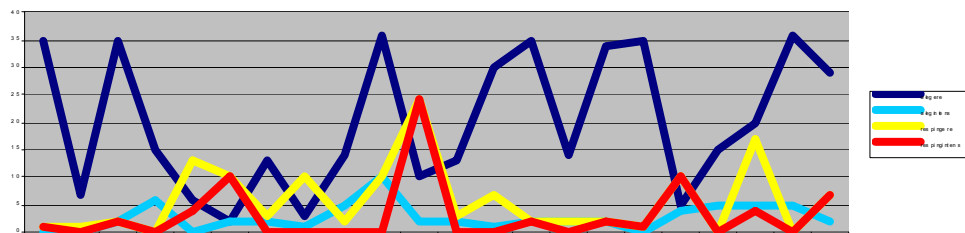


**Figure 8. Preference diagram in special education**



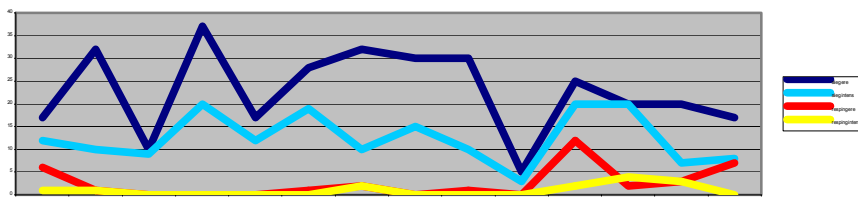
**Figure 9. Preference diagram in mass education**

The graphic representations of the sociometric estimations emphasize group cohesion at the level of the two school units. The graphs show the fact that the persons in special education develop deeper interaction relations, ensuring professional support and reciprocal help.



**Figure 10. Distribution of preference in mass education**





**Figure 11. Distribution of preference in special education**

The qualitative analysis of the results and the data comprised in the study allows us to state that professional stress in special education is higher than in mass education, and between the professional stress and professional satisfaction there is an inversely proportional relation. We present the arguments that support the qualitative analysis:

# Teachers in special education systems have a professional education that is in accordance to the position they have (e.g. Pedagogical High school and continuous training courses „Special Psycho pedagogy module”, High school and „Special education college”, Higher education- Special Psycho pedagogy, Psycho pedagogy, Psychology, which allowed them the moral-affective, cognitive-action training, indispensable for the new job. We appreciate that the organizational culture and the organizational intelligence are responsible for the means in which special education supports instructive-educative-compensative-recovery programs.

# The dynamic evaluation of personalized intervention programs at the level of special education allows for a rigorous identification of the individual progress registered by every pupil.

# The expectancy of the teachers in special education is reported to other valoric indicators than in the case of mass education teachers. If for a teacher in special education the obtaining of a little progress in child X (for instance focusing attention on task for 5 minutes as compared to the initial stage when attention was maintained for 45 seconds has a deep professional meaning and raises a feeling of professional satisfaction), for the teacher in Liviu Rebreanu School – school with a certain reputation (verbal label that shows excellent school results, exceptional professional competences of the entire staff) progress means reaching the target of 80-90% students with very good results in school and behavior, obtaining prizes and medals in school contests etc.

# To obtain positive results teachers in special education invest an energetic effort in manifesting a high degree of affection, patience and compassion, while teachers in mass education invest physical and psychical energy in preparing didactic activities, teaching students even after school hours, high volumes of didactic materials, analysis and evaluation.

By comparing the two groups we can observe that the indices that were included in the survey for the evaluation of job satisfaction registered higher values in the mass education teachers' self-assessment than in the case of special education teachers, one of the explanations being based on: level of professional training, teachers' expectancies, work employment and time allocated to preparation.

From the comparison of the data resulting from the survey to measure group cohesion we can observe that the level of special schools there is a higher number of choices than in the case of Liviu Rebreanu teachers. This is in accordance to the results obtained in the Job Survey and Job Satisfaction Survey-Global. A higher frequency of the choices can be associated with a lower level of professional stress and a higher value of professional satisfaction. The negative correlation between professional stress and professional satisfaction (less stress triggers more satisfaction) both in special and normal education systems can be explained by the implications of stress at cognitive level, affective-emotional, behavioral. High self-esteem, feeling of self-efficiency, control locus, meaning and purpose in life mean the simultaneous reaching of a low stress level and high job satisfaction.

The study led us to formulating some conclusions, as follows: professional stress in mass education is higher than in special education; professional satisfaction increases inversely proportional to the stress level both in special and normal education systems; the interval that comprises the job satisfaction index in special education is lower than in the interval comprising mass education index.

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## SYMBOLISM - COMPREHENSION RELATIONSHIP IN SCHOOL LEARNING

CORNELIA STAN\*

**ABSTRACT.** In everyday life, comprehension phase message induces interest of knowledge itself, the surrounding world, empowering, interpreted, skill formation to guess/search for meanings/multiple correlations between notions, facts, phenomena.

Communication with and through symbols, in concrete operative phase of thinking can trigger the transition to formal operative phase, the abstraction and generalization. Iconic and symbolic communication occupies a growing share in the instructive-educational, thanks largely to technical means of training (video-projectors, interactive whiteboards). Thus is born a series of questions such as: how does the image, respectively the symbol, at the cognitive development as well as to educating experience affective-emotional needs of students? To what extent determines the quality of social interactions symbols?

*Keywords:* symbol, comprehension, symbolic communication.

**ZUSAMMENFASSUNG.** In konkreten, täglichen Plan weckt das Verstehen einer Nachricht das Interesse der Selbst - und Umgebung-Erkenntnis, die Verantwortung, die Solidarität, die Ausbildung von folgenden Fähigkeiten: Sinnsuche/multiple Korrelationen zwischen den Begriffen, Fakten und Phänomene zu erraten. Kommunikation mit und durch Symbole kann, in die operative Phase des Denkens, den Übergang zu formalen operative Phase ermöglichen (abstraktes und konkretes Denken). Ikonischen und symbolischer Kommunikation nehmen einen wachsenden Anteil der pädagogischen Aktivitäten, vor allem dank technischer Mittel verwendet in dem Unterricht (Videoprojektoren, interaktive Whiteboards). So erscheint eine Reihe von Fragen, wie zum Beispiel: Wie wirkt das Bild oder den Symbol auf den kognitiven und affektiven-emotionale Entwicklung der Studierenden? Inwieweit bestimmen Symbole die Qualität der sozialen Interaktionen?

*Schlüsselwörter:* Symbol, Verständnis, symbolische Kommunikation

### 1. Introduction

All forms of communication are likely to persuade the various degrees of value human psyche are corruptible. As a reaction against those trends to influence

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the human will, no matter how it manifests, a didactic approach effectively must propose to use some positive ideas and concepts, mainly expressed through symbols empathic facets, whose perception, outside of contents rationally, request spiritual valences of trainees.

The teachers should pay increased attention to communicative ethos, given the major influence exerted on all components of the educational activities.

## 2. Symbols in contemporaneity

Ernst Cassirer (1994) proposes to define man as “animal simbolicum”, this naming it showing the specific difference, opening the way for civilization, meaning to a community consensus views and living forms.

So, symbol mediate between conscious and unconscious and establishes a relationship between what is hidden and what is manifest.

Contemporary man is surrounded by images which are currently assigned a certain symbolic significance, which is able to influence people’s sensitivity, images which are recognized status symbols.

Thus, the concept of symbol is used with different meanings. Versatility symbols stand rigorous classification, demonstrating failure of multiple attempts taxonomic. Means of designation are highly varied: words, gestures, objects etc. Jean Chevalier and Alain Gheerbrant (2009) reveals the following functions of symbols, which could cause a taxonomy of them:

- *exploratory function* of symbols requires expanding field of consciousness in an area devoid of any unit, where the investigation involves certain risks. In this case, the symbol allow identification of situations that reason can not define;

- *substitute function* of symbols gives key status symbol for entrance consciously, concealing certain semantic or emotional load;

- *gives mediation function* symbol binding role of environmental elements internal spiritual man, with external natural and social environment;

- *unifying force function* reflects the fact that the fundamental unifying symbols axes human existence, condenses the entire human experience (religious, cosmic, social, psychological);

- *pedagogical or therapeutic function* symbol assert anthropocentrism line. Man feels, because symbol, that identifies a supra-individual force, in the vast assembly environment, reaching in this way to understand it;

- *social function symbol* placed among the factors that determine insertion into reality. He puts the individual in relation to the social environment as a consequence of the fact that each social group and each age has its own symbols. Express self identity.

- *resonance function symbols* implies that you have them echo in individual or collective consciousness;

- *transcendental function* makes it possible harmonization requirements that differ from individual to individual and from one community to another. Establish contact between opposing forces makes it possible to overcome opposition.

- *the psychic energy transformer function* exercise a decisive role throughout human evolutionary movement, surpassing the role of knowledge and the means to enrich a stimulating aesthetic interest.

Interpretation of symbols is a subject for many sciences. In fact, all the sciences that study man in its various aspects, interferes in research and thus forced to join efforts for them deciphering and interpretation.

Connection between symbol and its meaning is determined on the basis of convention, with a circumstantial nature, being available either large or small groups of people or for longer periods or shorter. Decoding symbols requires knowledge of conventions that were the basis of their establishment. Interpretation is the act of putting symbols in relation to the means of the object by interpretive consciousness. Transparency is very important in the interpretation of symbols, leading interpretive relationship between consciousness and the means by which it is designated symbol.

The same symbol has different meanings depending on individuals, nations, ethnicities, historical era, being closely related to collective psychology. Symbol belongs to the social environment, even if it appeared in an individual consciousness. This means that there are complex cultural creations, prepared and circulated by certain communities.

New schools of thought consider communication phenomenon relationship, not a simple transmission of information. Thus, to live is to communicate, to be in relationship with physical and social environment and the common man through his entire being and with all their forms expressive, not only words. Because man can not live life without manifest themselves in relation to others, so without expressing this, everything we do has a meaning for others. This may make the sign of equivalence between communication and behavior in a broad sense.

Teaching ability to communicate is essential in suggesting or setting latent expressive nuances. Teacher fully exploits the spoken word meanings to excite students and you capture. Avoiding concise expression or common, the figures of speech amplify the power of the message, by collateral meanings, directing behavior toward imaginary. (Ricoeur, 1984). Symbols, graphics or icons, substitute the word, condensing an incredible amount of information in all fields of knowledge. Combining these channels of communication in teaching, organization, review and evaluation stimulates receptivity facilitates interdisciplinary logical correlations, increases the attractiveness of the subject and increase his motivation.

Using semiotic potential is a major purchase, that involves knowing to control gestures, body language, to meet expectations of actors, it means, in fact, form a communicative competence (Judith Greene, 1986).

The teaching approach perceptual images allow decoding easier, resulting more accessible communication. A pedagogy of the image, well shaped, can stimulate learning through direct observation and a brief review of learning content. Transmitted, but mostly will be refreshed and reorganized significant information, facilitating conceptualization itself. This justifies the usefulness of symbols in consolidation, enrichment and refinement of knowledge, providing storing logic and flexibility of thought.

### **3. Formative valences of symbolic communication**

Understanding and experiencing the world is more affective than cognitive. The social phenomenon comprehension provide cognitive connections by themselves. The literary texts incorporates significant connotative structure, whose content is inexhaustible and can lead to coverage or discovery, the coding or decoding meaning.

Affective communication highlight the ability of educators to understand the motivations and aspirations of pupils, involving a sustained personal engagement.

Genuine knowledge is determined by the teaching conditions that influence building and learning, and modifying and adapting existing content concepts. Any scientific concept is inserted into a complex network, coherent and organized and established connections support a conceptual field.

Social interactions have an essential role in triggering cognitive conflict. They induce school knowledge, producing intellectual progress, provided that the subject was aware of this.

Based on the major role assumed by educators in preparing children for life, from the concern interdisciplinary or transdisciplinary teaching, from care to reduce or overcome barriers of communication, from cultivating a nuanced language, we identified symbolic communication, as a means of formative facilitate holistic approach to reality in the broad sense, but also the approach of the school curriculum narrowly.

Therefore we wanted to determine the symbols used pedagogical learning at different ages, based on the idea that if the symbols facilitates learning and comprehension messages, symbolic communication promotes implicitly valuing the social and linguistic intelligence.

The major objectives of the research were reflected in:

- monitoring capacity of receiving / generating symbolic communication;
- avoid / remove communication barriers through the use of symbols;
- harnessing the potential ludic symbols in zone of proximal development, in order to achieve and maintain optimum motivation;
- encouraging students to formulate personal opinions (with, by, about symbols) using methods of critical thinking;
- developing social and emotional component of school children, involvement in activities focused mainly on organizing learning content in teamwork tasks.

For this, we implemented the first program of acquiring teaching and use of symbols as active method in acquiring and consolidating knowledge from elementary school grade level, aiming also to establish possible relationships between teachers improve communication using symbols and obtain maximal results best of learning.

Involved in research activities have included:

- learning the symbols present in various literary texts appealing to critical thinking, multiple intelligences, metacognition;
- the use of symbols in cooperative work and learning, taking advantage and are cultivating emotional intelligence and interpersonal communication favoring teaching and learning.

The experiment was applied to students in two classes IV, consisting of 23 and 21 students. Teams both classes are characterized by heterogeneity, both in terms of the degree of development reached cognitive mental processes, but especially in emotionally-affective and social. However, a modest number of students was highlighted in the pre-experimental phase, criticism or elements of logical inference.

In the same stage of the experiment, the affective processes were revealed by spontaneous manifestations, intense, with rapid changes from excitement to demoralization, from individualism to solidarity, most students being easily impressionable, especially in relation to situations presenting and analyzing the various conflicting aspects of literary texts studied.

In terms of sampling elements contents, research aimed discipline Romanian language and literature, being selected three or four topics of study subsumed monthly basis, taught the word support, chosen from among tale (popular and cult), because their formative valences.

In the formative experiment, the eight units have watched a few constants in the act of teaching:

- text semiosis - which require separation referential aspects, the reconstruction of meaning, the message from the perspective of the reader, re-reading the metatextual approach, the redefinition critical reproductive;

- reading and re-reading the text - which reveals and adds original meaning, understanding and interpreting symbolic processes of discovery, deciphering the meaning and/or significance;

- addressing affective/emotional text - aimed at identifying reaction/rejection and correlation with personal experiences.

To form the habit of critical approach literary texts were used as teaching methods: explanatory lecture, shaping, vocabulary exercises, brainstorming. In reading strengthening, the methods were used: thinking hats, the cube. In evaluation: Venn diagram, gallery tour, dramatization, and to recap: clusters, quintet etc.

Applying specific methods of stimulation/development experience creativity through active participation in cognitive, affective and empathic communication/expression have provided ways of perceiving, feeling and expression of various configurations of stimuli and their communication transcoding.

Achievement and fostering access to knowledge throughout the experiment was performed by the subject's active involvement in the construction process, the mental plane, the object of knowledge, with a strong formative character:

a) stimulate mental processes:

- sensory (feelings, perceptions, representations) in reading activities accompanied by photos, games, music, drawing or painting;

- intellectual: thinking, memory, imagination, especially in times of lessons of history or civic education, the generalization and categorization occupied a significant place;



- volitional in all activities, by maintaining optimal due motivational interdisciplinary approach, holistic symbols;

- affective - during lessons focusing on fairy tales, legends, parables, proverbs, accompanied by PowerPoint projections with appropriate content based on examples/ links from/to real life, valuing personal experience and collective.

b) depth study of literary texts as a support for teaching and understanding symbols, symbolic communication targeting, seen as a means and method of learning, as follows:

- familiarity with the graphical and conceptual symbols;
- activation, enrichment, growth language expressiveness;
- develop the ability to track subtle clues in the text, to infer the evolution examined typologies, based characters and text structure;

- obtaining retention and transfer of knowledge in all subject areas in extracurricular activities and in everyday life;

- identify different meanings of the error, depending on determinants of context, the consequences caused by reading and interpreting of parables, fables, parodies;

- reasoning and accept opinions, feelings, different approaches of facts, characters and people.

As a result of running the experiment over a period of about five months, were obtained some data, collected through systematic observation, recording students' school results on various sequences of learning and through direct conversation with students.

From data analysis, it is noted that determination and practice metacognitive behavior (through critical thinking, based on the types of intelligence) was reflected in increasing school performance.

Tests provided cognitive information and the feedback led adjustment over time the contents and revealed educational attainment at the end of the experiment.

By solving diverse learning tasks, attractive, designed zone of proximal development, symbolic communication gave higher valent entire student mental developments, training mostly higher operations of thought (generalization and abstraction). Results, materialized in progress in knowledge and cognitive linguistic competence were assessed by reference to the objectives.

To sample initial assessment, the cognitive testing prior experiment highlighted the following issues: most students know symbols learned in previous years (like traffic signs), the significance of color (such as a lily or flag). Instead unanimously confuse the meaning of the object of utility objects (for example the road). They know the proper meaning of words like cave, fountain, spiral, candle, but not their symbolic connotations. Very few students show originality in interpretation of expressions (for example eyes are the mirror). Four students proved not know the notion of symbol/stands. Student achievement expressed in qualification responses are evaluated in the following table:

**Table 1**

**Assessment of students' responses in the pre-experimental**

Very well	Good	Enough	Not enough
24 responses explicitly formulated, spelled correctly	12 responses explicitly formulated, spelled correctly	6 responses explicitly formulated, spelled correctly	2 responses explicitly formulated, spelled correctly

During the experiment, monthly interim testing (summative nature) were the reference points in the composition of individual progression chart.

In the post-experiment revealed a gradual increase of interest, initially for tale and for his approach in terms of symbols, then for reading in general, students being incited by identifying symbols in the proposed texts and establish connections with other subjects or with their existence.

Frequency of communication barriers with colleagues or teacher dropped significantly, in part thanks to the extra-curricular activities.

Cognitive school performance rendered by the results presented in Table 2 illustrates that after unfolding experiments show an increase in students' correct answers related to the symbols theme, but showed also, a pedagogical communication optimization.

**Table 2**

**Assessment of students' responses in the post-experimental**

Very well	Good	Enough	Not enough
34 responses explicitly formulated, spelled correctly	8 responses explicitly formulated, spelled correctly	2 responses explicitly formulated, spelled correctly	-

Enriching learning experience through the use of symbols in teaching and learning, as in daily activities was demonstrated by increased interest in reading, emotional involvement of students in higher proportion in the case of co-participation in activities, but also by academic progress due to learning motivation.

**4. Conclusions**

The paper contains possible landmarks in the development of a training model corresponding new paradigm, being a genuine learning support focused on symbolism, thanks holistic approach, transdisciplinary and interdisciplinary. This allows learning:

- increasing the size of spelling practical and applied knowledge through reference to concrete situations of life, conceptualized to support a construction of scientific knowledge;

- making easier the transfer of knowledge, the premise of adapting learners in different contexts and different demands;

- complementary approach to teaching strategies, valuing maximum mental potential acting with best motivation in the zone of proximal development, emphasizing the importance of metacognitive strategies;

- facilitates comprehension, literary text;

- ensure academic success for all students, eliminate obstacles by displaying independence in action, the constructive spirit of acceptance of change, to overcome patterns and finding new solution, allowing maturation of social relations.

Notions and concepts were learned in a relaxing endeavor of confidence. Satisfaction decoding of contents, in both group and individual, prompting students to engage in an active learning, logic, creative.

Thus, learning centered on symbols allows permanent restructuring, endless connections and gradual integration of new concepts in a concentric learning.

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## IMPACT OF THE MOTIVATIONAL LEVEL ON SCHOOL PERFORMANCE: A QUALITATIVE ANALYSIS OF TEACHER'S OPINIONS

DELIA MUSTE\*

**ABSTRACT.** In the context of an increasing level of interest expressed in relation to the need to implement new strategies of improving the quality of the educational process, it is considered absolutely necessary to analyze the motivational process itself, as a successful educational approach developed in the classroom cannot exist without a consistent motivational support and if unable to prove persistence over time. Thus, identifying the main conditions that contribute to creating a motivating learning environment plays a decisive role in determining the impact of motivation on school performance, but also in highlighting the potential solutions to problematic situations.

**Keywords:** *motivation, motivational strategies, learning environment, school performance, motivated involvement*

**ZUSAMMENFASSUNG.** Im Rahmen des zunehmenden Interesses in Bezug auf die Notwendigkeit der Einführung im Unterricht von neuen Strategien, um die Qualität des Lernprozesses zu verbessern, wird als absolut notwendig die Analyse der Motivation selbst betrachtet, da der erfolgreiche pädagogische Ansatz in der Klasse in der Abwesenheit einer konsequenten Motivation nicht existieren und seine Persistenz im Laufe der Zeit nicht nachgewiesen werden kann. Somit spielt die Identifikation der wichtigsten Bedingungen, die zur Schaffung einer motivierenden Lernumgebung beitragen, eine entscheidende Rolle bei der Bestimmung der Auswirkungen der Motivation auf die schulischen Lernleistungen, aber auch in der Auszeichnung der möglichen Lösungen für die Überwindung der Problemsituationen.

**Schlüsselerörter:** *Motivation, Motivationsstrategien, Lernumgebung, Schulleistungen, motiviertes Engagement*

### 1. Introduction

Identifying the key conditions that help create a motivating learning environment plays a decisive role in determining the impact of motivation on school performance, but also in highlighting possible solutions to help overcome problematic

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situations. Through the specialized teachers conducting specific activities, the educational unit can contribute significantly to improve the installed deficiencies and to insert certain changes in the way in which the educational phenomenon is addressed, changes designed to increase student motivated involvement in the educational process.

We believe that the starting point in building learning situations with real motivating potential is the teacher's ability to capture and correctly identify the elements of an educational environment.

The aim of this paper is to identify the motivational factors present in school learning activities in order to build up strategies to increase students' school performance. We also aim to identify teacher's training needs, in terms of familiarity with various motivating techniques specific to school environment.

## 2. The ascertaining approach for identifying teachers' perceptions of how students can be motivated to learn

Our approach is an ascertaining one and is conducted in order to identify the most relevant data on the actual attitudinal peak students have towards learning, as well as to identify the ways to maintain or increase it, ways which are familiar to primary school teachers. Subsequently, this ascertaining-type investigative approach can be the starting point towards establishing effective action strategies to be implemented at school.

Our intentions in relation to this ascertaining study are:

- ❖ *To identify the teachers' perspective on the level of intrinsic and extrinsic motivation students manifest in relation to learning activities conducted in formal situations;*
- ❖ *To list the motivational strategies used in the educational process in relation to learning, as identified by the teachers;*
- ❖ *To list the data teachers have on exactly how to implement motivational strategies.*

General aim	Derived specific objectives
<p><i>To list the motivational strategies used in the educational process in relation to learning, as identified by the teachers</i></p>	<ul style="list-style-type: none"> <li>➤ Identifying teachers' opinions on the strategies used to help motivate students to learn;</li> <li>➤ Assessing teachers' availability to engage in activities to learn new motivating techniques;</li> <li>➤ Identifying the difficulties teachers face when motivating students to learn.</li> </ul>

The group consisted of 12 teachers who teach primary school students and the starting point was the need for an early development of a positive attitude towards learning supported by the motivational approach, but without neglecting one very important factor: the intellectual, physical, emotional development of the trainer.

We also consider it important to justify our choice by the fact that this grade is the first year of the **curriculum development cycle** (grades III – VI-a), whose main aim is to develop the basic capacity necessary to continue the studies.

Due to the low number of teachers involved in the present research, we have chosen a predominantly qualitative investigation of the collected data. All teachers are tenure teachers in their educational institutions and their professional experience ranges between 5 to 20 years, as follows:

- ❖ teaching experience between 5 - 10 years – 3 teachers;
- ❖ teaching experience between 11 - 15 years – 3 teachers;
- ❖ teaching experience between 16 - 20 years – 3 teachers;
- ❖ teaching experience between 20 years – 3 teachers.

In order to provide a comprehensive picture of the motivation for learning as perceived by the subjects involved, we established several lines of action that will be the basis for investigating the motivational phenomenon characteristic to the educational environment. Generically, we have defined aspects such as:

- ❖ the impact of motivation on students' performance as perceived by the teachers;
- ❖ concrete identification of the reasons students have for learning;
- ❖ highlighting the basic characteristics of the educational environment built by the teacher;
- ❖ teachers' identification of the strategies on the increase of student's motivation to learn;
- ❖ identification of the training needs related to the programmes stimulating learning motivation.

The data collection instrument was a questionnaire addressed to teachers on the identification of the motivation strategies and of the attitudinal peak existing in the classroom. This tool is based on four specific sequences: inventory reasons why students learn, review the conditions to achieve a stimulating educational environment, stating the main strategies used to motivate students in the classroom, but also identify their training needs in terms of familiarity with learning new strategies motivated.

➤ *assessment of the reasons why students learn* is the starting point in making the most important decisions addressing the educational phenomenon as a whole, based on the premise that motivating students to learn can contribute significantly to the increase of the educational process efficiency.

➤ *analysis of the conditions for achieving a stimulating educational environment* takes into account the need for teachers to become aware and responsible for the role of 'architect' of certain learning situations consistent with the expectations of the students and their explicit needs for sustainable development.

➤ *stating the main strategies for motivating students* teachers use in the classroom allows inventory of the known strategies and subsequent establishment of a valid program to stimulate motivation. They can be the starting point for rethinking the process according to the characteristics of each class, but can also help establish relationships with new strategies.

➤ *identification of the own training needs*, starting from the assumption that the need for constant and sustained personal development must be part of every teacher’s needs analysis, not only in the sphere of motivational strategies, but in as far as the teaching activity itself is concerned.

Thus, the questionnaire for teachers included both open items (which allowed us to directly note the personal opinion of teachers on the motivational phenomenon energetically underlying the learning activity) and closed items which implied choosing an answer from a set of given alternatives. The proportion of open items, significantly higher than the other type, was established in accordance with the low number of teachers participating in this study, because such an instrument will eventually allow a detailed qualitative research.

### 3. Qualitative analysis of the data obtained

The questions of the first part of the questionnaire for teachers focused on information on the causes responsible for triggering the act of learning and thus, the analysis of the responses outlined two categories of reasons involved, depending on the existing level groups in the classroom.

**Table 1**

**Teachers’ perception on the distribution of the grounds underlying the act of learning, according to the level groups existing in the class**

Students with superior performance	Students with average performance	Students with lower performance
<ul style="list-style-type: none"> <li>○ a need to know;</li> <li>○ enriching the cultural horizon</li> <li>○ the competitive spirit;</li> <li>○ training for a future profession;</li> <li>○ remaining among the top students in the class;</li> <li>○ a privileged position within the structure they are a part of</li> <li>○ consolidating the prestige gained;</li> <li>○ the wish to meet the expectations of others.</li> </ul>	<ul style="list-style-type: none"> <li>○ training for a future profession;</li> <li>○ material rewards from family;</li> </ul>	<ul style="list-style-type: none"> <li>○ avoiding failure;</li> <li>○ avoiding punishment from parents;</li> <li>○ material rewards;</li> </ul>

Analysis of Table 1 enables us to specifically identify the way in which these reasons polarize, depending on the student's performance level. Thus, for students with superior potential and performance, we identify motivations in the scope of personal development, intrinsic motivation characterized by durability, effectiveness and persistence over time. There is also external motivation, but it's positive external motivation, which leads us to consider them an additional aspect of the learning process and to a certain extent they are also specific to the age of students (an average of about 10 years). However, we still advocate that this internal motivation gradually replace extrinsic motivation, because they can support more the learning effort in a more consistent manner.

At the opposite end there is the motivation for students with low performance, as identified by teachers. As expected, in this context we refer to a category including predominantly external motivation:

❖ **positive external motivation** aimed at obtaining benefits (mainly material) as a result of the cognitive effort. This motivation remains external and therefore does not make the action appealing to the students, as it aims exclusively its result and not the process.

❖ **negative external motivation**, which are based on the attitude of removing any unpleasant consequences that might arise in the process of knowledge: criticism, fear of failure or fear of punishment. This type of motivation occurs in situations where the people involved are more susceptible to sanctions than to anything else.

Knowing what triggers motivated learning and the classification of these factors into preset categories can help us, as well as other teachers, to structure learning sequences in a manner as close to the existing educational reality as possible.

With regard to the request addressed to teachers to illustrate the need to stimulate students' motivation, they believe that such action proves to be indispensable in the educational process. Therefore, the presence of motivational factors in teaching will lead to increased school performance of students and effectiveness of teaching.

The inventory of the strategies for motivating students commonly used in the classroom by teachers according to the importance given to each, and depending on the frequency of its use will be the starting point of our analysis. We identified them as follows: verbal assessments, provision of individual tasks, group activities, proposal of exciting exercises and games to be solved, presentation of interesting situations, material rewards, continuous feedback, constant support or assessment when solving problematic situations.

The motivation for which students learn must be analyzed in relation to the methods used to motivate students used by teachers when working with their students. Verbal assessments and exciting activities lead this hierarchy, followed by the presentation of interesting information or the use of individualized tasks. Other elements considered to be important are: providing feedback, support from teachers or even material rewards that still have an impact given the students' age (10 years). The means of providing feedback, the component with a regulator character



present throughout the teaching process is decisive when it comes to the effectiveness of the students' learning. Therefore, constant assessment during the lessons and the final moment of the educational approach must capitalize on these aspects.

Investigation of teachers' self-perception data on the quality of the classroom activities target several consistent subdivisions. This item aims to gather information on the teachers' feelings during the lessons, laying less emphasis on the lesson's benefits to students. We consider that it is necessary to discuss in detail the definition of organized environment, knowledge application level and effective ways of relating to the class.

Knowing that the existence of a stimulating environment in the classroom helps support student motivation, we asked teachers to identify the organizational conditions of such an environment. Thus, special attention was paid to conditions such as:

- The existence of optimal student-student relationships;
- Use of interactive teaching methods;
- The existence of appropriate classroom furniture;
- A relaxed attitude;
- Existence of individual tasks;
- Display and use of the products of the activities.

The literature also notes the role of increased socialization among members of a community in terms of motivation to achieve a specific activity, as the establishment of relationships among the members of the school community may lead to the perception of the space as beneficial and supportive to the act of learning.

Moreover, the use of the students' products can also help support student motivation. Corroborating this with the known human need to be appreciated for the effort made in achieving a task, we can consider that maintaining such conditions in education is justified.

Individual tasks and a relaxed attitude of the teacher in relation to the activities specific to the educational environment are also mentioned, which enables us to consider that highlighting the real potential of these conditions is also necessary.

Teachers believe that active and diversified teaching strategies also concur in achieving interesting lessons. The two components act complementarily, facilitating increased efficiency of the learning activities. Consequently, students' attitude towards learning will have mainly positive effects, whose immediately visible ones are: sustainability and flexibility of knowledge, increase of their application or development of self-training skills.

One of the most frequent conditions teachers mention is the promotion of innovations as a triggering factor of interest in school learning. It can be associated with the moment of capturing the attention of the students, or it can be present as stand-alone sequence in teaching, or it can be inserted at various points of the lesson. The benefits of the "new" in teaching may be multiple, ranging from creating a bridge

between different content sequences, to "re-energizing" the group when fatigued, an excuse for a formative assessment or a means of developing the self-learning ability in students.

Interest and efficiency are closely inter-related, which is why we decided to investigate as well teachers' perception of efficiency in school work. Thus, we can see that the word circumscribes a few components, such as:

- ❖ acquiring new knowledge,
- ❖ differentiated work,
- ❖ an efficient communication,
- ❖ attention to proper time dosing,
- ❖ emphasis on group activities.

All these can be addressed as today there is an increasing concern for the need of providing quality, efficient and practical education.

The relations between efficiency, interest and stimulating potential in teaching as perceived by teachers are shown in relation to certain qualities of the educational process, as follows:

- the need for a more active teaching approach is present in all three categories of items, being a sine qua non condition for achieving specific school activities;
- increase of the efficiency of classroom communication, whether we refer to vertical communication between teacher and student, or to communication among students, is another goal mentioned by teachers, given the undeniable role of communication;
- highlighting the desirable benefits, not only by quantitative assessments but, in particular, by qualitative assessments, may be a key element of a motivating teaching activity; its benefits are numerous, starting with a better understanding of their school performance, continuing with support given to students in developing self-assessment skills, even in the primary school education.

Information on teachers' attitude towards the need of self-instruction and self-training, truly reveals its efficiency at an older age, but need to be built begins as early as primary school. Promotion of self-instruction strategies that serve as models in developing personal ones can lead to the development of such strategies at the level of each student. Such strategies were identified within the educational approach as follows: doing homework, developing thematic projects, emphasising individual work, drawing up reading cards or participating to interdisciplinary activities.

Given that every teacher is a potential model for students they work with, we asked ourselves how they relate to their own training and personal development. The data obtained indicate that teachers are aware of the importance of self-instruction in their own development process and that they consider it more important than training in as far as their status as adults is concerned. Knowing self-instruction strategies and their implementation on their own person must precede the stage of explaining and achieving them in relation to the students. Moreover, due to the growing amount of information provided by studies specialized in teaching, as well as to the rate of obsolescence of the information within present-day society, teachers find themselves in a position of permanent self-trainer.

Under the same auspices as the ones mentioned above, we consider that an analysis of the motivation underlying self-study of both teachers and students is fully justified. Thus, we would like to mention the constant need of information (derived from the rapidly increasing pace of information obsolescence), followed by the need to enrich the general culture, the need for disseminating good practices in relation to colleagues and enriching the educational life experience lived by each actor separately. We believe that the motivational factors mentioned cover only a part of the constellation of possible motivations, but that they successfully match the information provided by teachers with regard to the information sources activated in the self-training process. Thus, the literature in the field ranks as number one in the teaching hierarchy, seconded by electronic sources accessible through the Internet, as well as by the magazines focusing on various areas of interest. Thus, we can talk about a permanent need to enrich the inventory of information sources, along with the need to develop skills for selecting the contents one comes into contact with.

#### 4. Conclusions

All opinions recorded as a result of the implementation of the investigative tools provided us the relevant data that helped us determine the factual situation, but also establish the directions for action or to improve the degree of efficiency of the teaching process. At the same time, the data provided by teachers, combined with the expectations of both parents and students, will allow us to trace the main lines of discussion that will be addressed in future workshops to be held with teachers involved in the study, in order to debate on the necessity of a motivational incentive programme applicable in the school context.

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## PSYCHODRAMA AND PERSONAL DEVELOPMENT

DAN PAȘCA\*

**ABSTRACT.** Research is a randomized clinical trial conducted on a group of 28 teenagers, mostly aged between 18 and 20 years (11 in experimental sample and 17 in the control sample). Independent variable was the participation/non participation in psychodrama group for personal development and dependent variables: the anxiety, the empathy, the personality traits. It was created and applied a questionnaire to evaluate the behavior of the group leader. Group members have established a hierarchy of Yalom's therapeutic factors, based on their experience in the group.

**Keywords:** *psychodrama, personal development, personal development group, adolescents*

**ZUSAMMENFASSUNG.** Der Forschung ist eine randomisierte klinische Studie durchgeführt an einer Gruppe von 28 Jugendlichen, meist im Alter zwischen 18 und 20 Jahren (11 in die experimentellen Gruppe und 17 in der Kontrollgruppe). Unabhängige Variablen war die Teilnahme/Nichtteilnahme in Psychodrama-Gruppe für die persönliche Entwicklung und abhängigen Variablen: die Angst, die Empathie, die Persönlichkeitsmerkmale. Es wurde geschaffen und angewandt einen Fragebogen, um das Verhalten des Gruppenleiters zu bewerten. Die Gruppenmitglieder haben den etablierten eine Hierarchie der therapeutischen Faktoren Yalom, basierend auf ihren Erfahrungen in der Gruppe.

**Schlüsselwörter:** *Psychodrama, Persönlichkeitsentwicklung, persönliche Entwicklung Gruppe, Jugendlichen*

### 1. Introduction

In a very broad sense, personal development refers to any activity designed to result in optimizing behavior of individual to better adapt to his or her social requirements, to achieve success in a particular area of its existence. Most often, personal development is presented as a self-awareness activity held under the guidance of psychologists or other mental health professionals in order to optimize behavior and improve quality of life of those involved. Mitrofan (2008, 14), for example, found that personal development is a “normal therapy” claimed by “existential problems of all kinds, stress and risks of modern life” and for the individuals “motivated to self-exceeding or to fulfill life, performing in their relationships with themselves and with others.”

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Between individual and group is a relationship of mutual interdependence. Thus, Anderson and Robertson (1985, 142) considered that “the personal development is essentially a social process” and, as such, the best environment in which it is held is that of a group. The essence of personal development groups is the “cultural permission” for self-disclosure and feedback, unprecedented in the social environment commonplace. Members of these groups are allowed, and afford one another, to self-disclosure, to express thoughts and feelings openly and honestly to the other, to give and receive feedback on how they interact in groups. They receive direct feedback from others, have the opportunity to validate consensual reality of interpersonal perceptions and can compare their self perceptions about themselves and perceptions of others to seek congruence of various perceptual content. When they “risk” to practice new behaviors, in the protector climate of a group that provides a sense of trust and psychological safety, they get the opportunity to improve efficiency and interpersonal relationship.

From meeting the interest to lead psychodrama groups for self-knowledge and personal development of teenagers with the desire to scientifically validate such an approach, emerging the idea to this research. Its aim was to learn, with an experimental design, whether the participation of adolescents in psychodrama group for personal development produces measurable psychological changes, which is their perception of therapeutic factors suspected to be responsible for these changes and the behavior of group leader in charge and if the theory of psychodrama can explain the results.

Psychodrama is a form of group psychotherapy in which participants put on stage, through role play, their past, present or future life situations, in order to resolve intrapsychic or interpersonal difficulties. Basic dictum of psychodrama is “Show us, do not tell us” on the premise that actions speak louder than words. May be put on stage events in the past (unresolved situations, trauma, dreams, etc.), current situations (conflicts, disturbed interpersonal relationships, inhibitions, etc.) and preparation for future situations (a job interview, negotiation or separation). Psychodrama deal with life situations involving the external manifestations, visible to all involved, and internal mental processes that are “tangible” by exteriorization.

Jacob Levi Moreno, founder of psychodrama, has formulated a theory of the role of the premise that man is a role player, that every individual has a repertoire of roles which dominate his behavior, and that each culture offers its members a very broad set of roles. Personality is the constellation of roles that the individual updates to cope with the everyday challenges, and the role is “the form in which an individual ... react to a specific situation involving other people or other objects” (Moreno, 2009, 125).

Moreno found that, for good adaptation, the individual requires to develop a sufficiently broad repertoire of roles. People who operate within a narrow repertoire of roles or have difficulty moving from one role to another live their lives in a limited, restricted, not enough spontaneous way.

Stimulating self-knowledge, psychodrama group for personal development provides opportunities for a better understanding of adolescents needs and desires and ways of meeting them, improves self and events control. Also encourages giving

up dysfunctional belief that there are not many choices to make and allows access to a world of many possibilities. Therefore, we considered that the participation of adolescents in psychodrama group activities for personal development is a useful approach, which they would benefit such as increased spontaneity (as evidenced indirectly by lowering anxiety) and increased cognitive and emotional dimensions of empathy.

## 2. Research

The *design of research* is experimental, with one independent variable and several dependent variables:

*Independent variable:*

- Participation/non-participation in psychodrama group for personal development.

*Dependent variables:*

- General anxiety and its components

- Cognitive and emotional components of empathy

- Personality traits.

*General hypothesis* of the research were:

1. If adolescents participate in the activities of a psychodrama group for personal development, then their anxiety level decreases.

2. If adolescents participate in the activities of a psychodrama group for personal development, then their empathy increases.

3. If adolescents participate in the activities of a psychodrama group for personal development, then changes will occur in their personality traits.

*Specific hypothesis* of the research were:

1. In pre-testing, no significant difference between scores of teenagers in the experimental sample and scores of adolescents in the control sample, for the Cattell Anxiety Questionnaire scales.

2. In pre-testing, no significant difference between scores of adolescents in the experimental sample and scores of adolescents in the control sample, for the Davis Interpersonal Reactivity Index scales.

3. In pre-testing, no significant difference between scores of teenagers in the experimental sample and scores of adolescents in the control sample, for the main personality factors of the Cattell 16 PF Questionnaire.

4. There is no significant difference between the pre-test scores of adolescents in the control group and their post-test scores, for the Cattell Anxiety Questionnaire scales.

5. There is no significant difference between the pre-test scores of adolescents in the control group and their post-test scores, for the Davis Interpersonal Reactivity Index scales.

6. There is no significant difference between the pre-test scores of adolescents in the control group and their post-test scores, for the personality factors of Cattell 16 PF Questionnaire.



7. Post-test scores of adolescents in the experimental sample are significantly lower than pre-test scores, for the Cattell Anxiety Questionnaire scales.

8. Post-test scores of adolescents in the experimental sample are significantly higher than pre-test scores, for the Davis Interpersonal Reactivity Index scales.

9. Post-test scores of adolescents in the experimental sample is significantly different than pre-test scores, for the personality factors of Cattell 16 PF questionnaire.

Personal development group was a closed group. There were 12 meetings, approximately 5 hours each, ie a total of 60 hours. I led all 12 meetings of the group.

Randomized clinical experiment was attended by 28 students, divided into two samples:

1. experimental sample, consisting of 11 students who participated in group activities for personal development
2. control sample, consisting of 17 other students.

All these students were enrolled in the study period, in the first year at the Faculty of Psychology and Educational Sciences, University of Brașov.

Distribution of participants in the two samples was achieved by a simple random sampling procedure.

The average age of the 28 study subjects was 19.57 years (19-23 years) with a standard deviation of 1.00.

The average age of adolescents in the experimental sample was 20.09 years (19-23 years) with a standard deviation of 1.38.

The average age of adolescents in the control sample was 19.24 years (19-20 years) with a standard deviation of 0.44.

Of the 28 study subjects, 25 are female and 3 male. The experimental sample are 10 females and a male, and in the control sample 15 females and two males. There is preponderance of female subjects and the similarity of the two samples based on gender distribution.

We used the following *instruments*:

- for the dependent variable anxiety: Cattell's Anxiety Scale
- for the dependent variable empathy: Davis's Interpersonal Reactivity Index
- for the dependent variable personality: 16 PF Cattell's Personality Questionnaire

For evaluation of Yalom's therapeutic factors we used Q-sort technique.

I created and used a questionnaire to investigate the behavior of group leader.

For Cattell's Anxiety Scale was calculate: gross note of overall anxiety, gross note of veiled anxiety, gross note of manifested anxiety, gross notes of the five primary factors: self-awareness (Q3), ego strength (C), paranoid inclination (L), propensity to guilt (A) and ergic tension (Q4).

For Davis's Interpersonal Reactivity Index, the first two scales, concern cognitive aspect of empathy, the other two emotional side of it, are the following:

- *perspective-taking scale* (SP) - assessing spontaneous attempts to adopt other people's perspectives and see things from their point of view

- *fantasy scale* (SI) - assesses the tendency to identify with characters in movies, novels, plays and other fictional situations

- *empathic concern scale* (PE) - assesses feelings of warmth, compassion and concern for others

- *personal distress scale* (PD) - evaluate personal feelings of anxiety and discomfort resulting from follow the negative experiences of others (Davis, 1980, 1983).

Cattell's 16 PF personality questionnaire measures 16 personality factors.

Yalom (1970) aimed to investigate the incidence of 12 therapeutic factors in different types of treatment groups or for personal development, based on rank ordering of the 60 items (five for each therapeutic factor) by the group members, to determine which therapeutic factors below are most highly valued by them.

*Altruism* refers to the opportunity which is afforded group members to provide support to others. With the experience of altruism, group members can improve their self esteem.

*Group cohesion* refers to group attractiveness for its members, encouraging participation, privacy and self-disclosure.

*Universality* refers to the discovery by the individual that is not the only one that has a problem that others have experienced similar problems. This discovery is often accompanied by a sense of relief.

*Interpersonal learning input* refers to the fact that the group allows members to optimize interpersonal learning, how they are seen by other people.

*Interpersonal learning output* refers to the fact that group members have the opportunity to experiment and validate new ways of relating to others.

*Guidance* refers to the instructions provided by the therapist, together with advice and suggestions about tackling life provided by the therapist and the other group members.

*Catharsis* can be defined, in a simple way, as the free expression of affect. Living and strong feelings make group members learn that emotional experiences can encourage feelings of closeness to others.

*Identification* refers to copying by members of certain features of other group members and leader. Group members often serve as role models for other members, through self-disclosure and honesty.

*Family re-enactment* refers to the awareness of group members transfer relations that come from their experiences of primary family, contributing to distortions in their interpersonal relations.

*Self-understanding* includes encouraging group members to recognize, integrate and express freely oneself parts previously kept hidden. Implies intellectual understanding of the relationship between past and present (genetic understanding).

*Instillation of hope* refers motivation to participate in group meetings by creating positive expectations about the results to be obtained.

*Existential factors* refers to reflection on existential issues, to deal with pain and ambiguity of life and accept that sometimes life is unfair and unjust and must take responsibility for the way we live.

In order to investigate how the leader carry out his duties related to the group management and his interpersonal style in the psychodrama group, I created a questionnaire. For this, I was inspired in the way Yalom and Leszcz (2008, 133-209) described the basic tasks of the therapist:

1. creating and maintaining group
2. building a culture of group
3. activation and the elucidation of the here-and-now.

The task of creating and maintaining group leader requires the attention in determining the place and times of meetings of the group, preventing friction between members, discouraging events that might threaten group cohesion: delays and repeated absences, various forms of subgroups, group tends to find a scapegoat for any unpleasant incident.

To build a culture of positive change in group, the group leader should establish, together with the group, an unwritten code of rules or norms of behavior, to promote “active involvement in the group, uncritical acceptance of others, extensive self-disclosure, desire to self-understanding and a strong desire to change current patterns of behavior” (Yalom and Leszcz, 2008, 137).

The third task is to help the group leader to put a strong emphasis on experience in the “here-and-now”. For this, he must show clearly enough that immediate events of group members have priority, both to their current existence outside the group, and to more distant events in their past. Is necessary to ensure a “self-reflexive loop” for examining and understanding behavior has just occurred (Yalom and Leszcz, 2008, 156).

Thus, the first part of the questionnaire (first 21 items) was dedicated to exploring the perception of personal development group members about how the leader perform to these elementary tasks and the second part (the other 21 items) focused on how was perceived his interpersonal behavior.

The 21 items of the first part of the questionnaire (7 items for each of the basic tasks of the leader) consist of statements which have expressed agreement/isagreement on a 5-step Lickert scale from “disagree at all or agree very little”, to “agree totally or very much”.

The second part of the questionnaire consists of a bipolar type of behavioral anchors that personal development group members were asked to place perceived leader behavior on a 7-step Lickert scale, closer to one or the other (or the same distance) of the two opposing statements describing behaviors. For example: “It was cold, distant, unfriendly.” versus “He was warm, kind, friendly.”

A serious discussion of the performance of adolescents as a result of their participation in psychodrama group for personal development can not take place without, first, to discuss the group process.

Motivations and expectations of members in connection with the group were quite different. The group was seen, from the beginning, in ways quite different. If some group members viewed it as a way to relax, others considered it an opportunity to know the others or themselves. Finally, there was the belief that group work could be useful for professional development for the profession of psychologist. Expectations were generally positive, and assessments at the end of meetings on activities were also in the same direction.

Structured exercises and intensive activity during self-disclosure meetings hurried pace, so that since very first meeting, group members presented their concerns about lack of trust in people, the inability to speak before a group or excessive perfectionism, the separation of parents, the absence of a parent went to work abroad, the other parent's problems with alcohol or too authoritarian and harsh style of another, the lack of a partner in love.

Although structured exercise revealed many personal issues (mainly in the form of conflict), I encountered resistance from potential players at the request to bring these themes on stage psychodrama, to be explored. But excessive use of structured exercises carries risks, as stressed Yalom and Leszcz (2008). With such exercises, leaders become more popular within their groups. They are perceived to be more efficient and competent, but, paradoxically, studies (Lieberman, Yalom and Miles, 1972, 1973) showed that results of group members who used the more structured exercise were significantly less favorable than members of groups with the fewest such exercises. Likely structured exercise stimulated a relatively high level of self-disclosure, but the group members had not courage to address their personal issues by enactment.

Given the stages of evolution of groups described by Yalom and Leszcz (2008) one can say that psychodrama group that I led did not exceed the initial stage of development in which members participate reluctantly, are moving, looking for position in group and are relatively dependent on indications of the leader. In the group there were no conflict, no struggle for dominance behavior or revolt against the leader or any member. No negative comments, criticism or hostility to the leader, were expressed. The group had a smooth evolution, characterized by tact and kindness, acceptance and mutual support.

Due to the small size of experimental sample ( $N_1 = 11$ ) and the control sample ( $N_2 = 17$ ) for research hypothesis testing I used nonparametric tests.

For the first part of the *questionnaire to investigate the behavior of the leader of the group*, resulting hierarchy of behaviors performed by me, for basic tasks in the group management.

It may be noted, from the hierarchy of these behaviors, that the psychodrama group members appreciated in particular the fact that I managed to create a positive atmosphere within the group work, a warm and secure environment that encourages

interaction increasingly varied and rich among its members. Were appreciated, largely focus on the immediate needs of the group, addressing relevant topics and allocation of sufficient time for reflection on experiences and extracting lessons required.

In the second part of the questionnaire, subjects stood on a Lickert scale from 1-7, closer to one or other of the two bipolar behavioral anchors used to describe a continuum of group leader behavior (eg from confidence to uncertainty, from an ordered to a disordered approach, etc.)

Based on notes obtained, I can see that group members have greatly appreciated my honesty and transparency, unbiased way to treat them separately. It was appreciated my ability to be humble, to recognize my limits when the case was "not to lose my head" because of comments I received from group members. I say, then, that my attitude was rather one of "facilitator" of the group's work, not one of "expert". My style of leadership was democratic, but not necessarily nondirective, because some group members felt that, at certain times of work, I am offered appropriate advice or possible solutions. Most controversial aspects of my leadership style were: if I was conciliatory, courteous or rather challenging, whether or not we offer some tips or solutions, if we were strict enough to ensure punctuality of the members. My behavior as a leader, although calm, relaxed, informal, was described as fairly mild, not very expressive and reserved to physical contact with group members.

*Q-sort technique* was applied to assess the therapeutic factors in psychodrama the group members were considered to be important in explaining the results obtained by them.

Note that psychodrama group members were particularly valued the opportunity to learn new things about themselves, because honest and responsible feedback that they received. They found not only the impression creates of others, but also unknown parts, less acceptable of themselves, which were then in a position to accept. Sometimes, they could find the source, with origins in the past, of some of their present problems. They also appreciated that improved their ability to approach people, to be more assertive and able to express their feelings.

For each of the 12 Yalom's therapeutic factors were calculated means, from the average rank of items that compose them. Thus, in table 1 is highlighted hierarchy of therapeutic factors according to their importance was attributed to the psychodrama group for personal development members.

It is interesting to point out that members of psychodrama groups in Israel have indicated, at the end of their groups, as being the most important therapeutic factors: interpersonal learning, catharsis, group cohesion and self-understanding (Kellermann, 1985). Of these therapeutic factors (self-understanding and interpersonal learning - learning interpersonal divided into input and output interpersonal learning) are even therapeutic factors that take in even this order, the top three positions in the hierarchy of therapeutic factors to be considered most important by members of personal development group through psychodrama, who participated in this research.

Table 1

**Hierarchy of Yalom's therapeutic factors**

Hierarchy	Therapeutic factors	Means
1	Self-understanding	24,27
2	Interpersonal learning – input	26,47
3	Interpersonal learning – output	27,00
4	Existential factors	27,89
5	Instillation of hope	28,02
6	Catharsis	29,49
7	Family re-enactment	29,67
8	Group cohesion	30,70
9	Altruism	31,36
10	Guidance	33,98
11	Universality	36,38
12	Identification	41,61

According to Yalom and Leszcz (2008, 107): “The same trio of the most important therapeutic factors (interpersonal learning-input, catharsis and self-understanding) has been reported in studies of personal development groups.”

It can be appreciated therefore that members of psychodrama group for personal development appreciated, in particular, the opportunity to receive feedback from other members and learn some things about the effects of their behavior on other people in a social microcosm whence reproduced at smaller scale, the larger living space. They had the opportunity to optimize their relationships, to experiment and validate new ways of relating to others. They could also develop social skills by understanding that sometimes there are discrepancies between intentions and actual impact of behavior on others. Group members felt encouraged to recognize, integrate and express freely oneself parts previously maintained in shadow and to expand their understanding of itself.

Choice, for the last positions of the hierarchy of these items - the therapeutic factors as guidance, universality and identification - is relatively easily explained.

Guidance, the process of influencing the behavior of members by offering advice from leaders and group members is generally discouraged in psychodrama and so did the personal development group.

Universality, ie the discovery that the others may have similar problems, is a factor which was attributed little significance as personal development group members did not share common suffering, as in psychotherapy or self-help groups.

Identification is also a factor which psychodrama group for personal development members have given little importance. As group leader I have tried, wherever possible, to not offer myself as a model and not a focus on the activities. I took rather a role of facilitator rather than a charismatic leader that can be taken as a model. Group members were less likely to look to colleagues in the group, but were concerned to define their own way forward for their personal development.

Mann-Whitney U test was used to verify the null hypothesis that, before handling the independent variable (participation / non-participation in personal development group), there were not significant differences between the two samples (experimental and control) in terms of dependent variables considered in view (anxiety, empathy, personality traits).

For any of the dependent variables, p significance level (two-tailed) was not below the threshold  $p = 0.05$ , so I concluded that there were not, before their activities for personal development group, significant differences between scores of adolescents in the experimental sample and scores of adolescents in the control sample for any of the dependent variables. Random assignment of subjects in the experimental and control sample provided the similarity of the two samples in terms of dependent variables.

Testing hypothesis of experiment, ie that participation in psychodrama group produced measurable physiological changes (in the anxiety, the empathy and the personality traits), involved comparing pre-test data and post-test data, separately for each of the two samples (experimental and control). To this end, the Wilcoxon test was used. Null hypothesis is that there are not significant differences between pre-test data and post-test data.

Following the Z scores and significance levels of p (two-tailed), it was found that were not significant differences between the pre-test scores of adolescents in the control sample and their post-test scores for any of dependent variables.

Following the Z scores and significance levels of p (two-tailed), it was found that were not significant differences between the pre-test scores of adolescents in the experimental sample and their post-test scores for any of the scales of Cattell's Anxiety Questionnaire.

Although, after participating in psychodrama group for personal development, it was found, for the experimental sample, a decrease in average of general anxiety scale from 37.91, in the pre-test, to 36.27, in the post-test, this decrease was not significant. If, for the control sample, the average of general anxiety in the pre-test (33.76) remained relatively constant (33.88 in the post-test), we can assume that the decrease of anxiety level of adolescents in the experimental sample due to their participation in the psychodrama group for personal development. To obtain, however, a significant decrease in anxiety level of these subjects would be needed, perhaps, a more consistent handling of the independent variable, or by their participation in a psychodrama group for personal development with a significantly higher number of hours, or by focusing more on enactment of some personal issues and less on structured exercises (fun and beneficial for group cohesion, but superficial). In psychodrama, the most important means of generating change is involved in playing the protagonist, by enactment a personal themes. For this to happen, everyone in the group need time to gain confidence in the group, overcoming resistance and taking the risk (more or less imaginary) to play the role of protagonist.

Following the Z scores and significance levels of p (two-tailed), it was found that, for any of the Davis's Interpersonal Reactivity Index scales, were not significant differences between the pre-test scores of adolescents in the experimental sample and their post-test scores.

There is an increase in average score of adolescents in the experimental sample from 17.73 to 18.91, for the scale of adoption of perspective, while the average for control sample on this cognitive scale of empathy remained practically constant (to changed from 19.59 to 19.41). It can be appreciated, therefore, that by participating in group activities involving psychodrama, adolescents in the experimental sample improved (not very much) the ability to put in place of other people, to see situations from their perspective and take more account of their views.

For scale of imagination, I found between pre-test and post-test scores, a decrease, from 20.45 to 19.27, of average for the experimental sample, while the average for control sample remained relatively constant (from 19.65 in pre-test to 19.53 in post-test). Perhaps this drop in scores has to do with awareness among adolescents in psychodrama group about unlocking the necessary spontaneity to overtaking the difficulties of interpreting a role or another. Faced with the task to play spontaneously a variety of roles, they could realize that translating in the fictional roles (in movies, books, plays) is not an easy task to fulfill.

For empathic concern scale, if for the control sample we observed a decrease in the average, from 21 in pre-test to 20.24 in post-test, for adolescents in the experimental sample we found reversed so that the average in pre-test was 20.32 and increased to 22.64 after their participation in personal development group. The explanation for this trend may be that the environment of group psychodrama was warm and protective, guided by rules of self-help, which has encouraged some members to show empathic concern in relation to others. Psychodrama group, and personal development groups in general, encourages self-disclosure and constructive feedback on this self-disclosure, receiving and providing support. It is possible that after spending over 60 hours in such a group and had the opportunity to be useful, to help the others from the position of auxiliary, group members rank themselves higher on their cordiality and courtesy, empathy and concern towards other people.

For the personal distress scale, the average remained constant in the control sample (12.35 in pre-test to 12.41 in post-test), but in the experimental sample fell from 16 in pre-test to 14.73 in post-test. Decrease of anxiety and psychological discomfort experienced by adolescents as a result of attending the suffering of others, found at the end of psychodrama group, can be linked directly with reducing the general level of anxiety, but with a sort of "emotional desensitization" and the understanding that suffering is a universal phenomenon.

On personality factors, was found one significant difference between gross scores of adolescents in the experimental sample obtained in pre-test and their scores in post-test for G personality factor (superego strength versus weak superego), (Wilcoxon:  $N1 = 11$ ,  $z = -2.21$ ,  $p = 0.027$ ).



It should be noted that for the G personality factor (superego strength versus weak superego), average scores of adolescents in the experimental sample in pre-test is 14.00 and the corresponding standard deviation is 2.53. In post-test average scores of adolescents in the experimental sample is 12.18, and standard deviation 2.75.

For the subjects in the control group, average scores in pre-test, for the same factor is 12.24, with a standard deviation of 3.77. Their average post-test scores is 12.76, with a standard deviation of 3.73. The difference between gross scores obtained in the pre-testing by the adolescents in the control sample and the scores obtained by them in the post-test, for G personality factor (superego strength versus weak superego) is insignificant (Wilcoxon:  $N_2 = 17$ ,  $z = -1.03$ ,  $p = 0.304$ ).

We found, based on these data, that one effect of adolescent participation in the experimental personal development group was a significant decrease in gross scores obtained on personality factor G (superego strength versus weak superego). For adolescents in the control group is observed, however, a slight increase in scores for this factor.

This means that, after participating in psychodrama group, group members in the experimental sample were found to be more likely (than adolescents in the control sample) to accept that sometimes are not responsible, they are not always tidy, conscientious or persistent. They have recognized, more easily, that they have a low tolerance to frustration, that are sometimes inconsistent and changeable, that they can have a very casual attitude against the rules and social manners.

This trend for psychodrama group members, at the end group, to more easily assign a weak superego features may have as explanation in the process of self-disclosure initiate in group. Group members can see how others perceive them, without suffering any negative consequences because of that, which inspires courage to do, in turn, self-disclosure. They learn that being open does not necessarily make you vulnerable. Self-disclosure entails the opportunity to receive feedback from group members to discover and accept the existence of "blind spots" and "weaknesses" in their personalities.

For the other 15 personality factors, were not found any significant difference between the scores of adolescents in the experimental sample in the pre-test and their scores in post-test.

### **3. Conclusions**

Since we found no significant differences between the scores of the two samples in the pre-test, confirmed the first three specific hypotheses:

1. In pre-testing, were not significant difference between scores of the teenagers in the experimental sample and the scores of the adolescents in the control sample, for the Cattell's Anxiety Questionnaire scales.

2. In pre-testing, were not significant difference between scores of the adolescents in the experimental sample and scores of the the adolescents in the control sample, for the Davis's Interpersonal Reactivity Index scales.

3. In pre-testing, were not significant difference between scores of the teenagers in the experimental sample and scores of the adolescents in the control sample, for the main personality factors of the Cattell's 16 PF Questionnaire.

For the control sample, there was no significant difference between the pre-test scores and the post-test scores so that the following specific hypotheses were confirmed:

4. There is no significant difference between the pre-test scores of adolescents in the control group and their post-test scores, for the Cattell's Anxiety Questionnaire scales.

5. There is no significant difference between the pre-test scores of adolescents in the control group and their post-test scores, for the Davis's Interpersonal Reactivity Index scales.

6. There is no significant difference between the pre-test scores of adolescents in the control group and their post-test scores, for the personality factors of Cattell's 16 PF Questionnaire.

For the experimental sample, the only significant difference between the pre-test and the post-test scores was for the G personality factor (strength superego versus weak superego).

Thus, the following specific hypotheses were invalidated:

7. In post-test, scores of adolescents in the experimental sample are significantly lower than in pre-test, for the Cattell's Anxiety Questionnaire scales.

8. In post-test scores of adolescents in the experimental sample are significantly higher than in pre-test, for the Davis's Interpersonal Reactivity Index scales.

Instead, specific hypothesis 9 is confirmed in part (for one of the 16 Cattell's personality factors: G factor - weak superego versus strong superego).

9. In post-test, scores of adolescents in the experimental sample is significantly different than in pre-test, for the personality factors of Cattell's 16 PF Questionnaire.

It can be said that adolescents scores in the experimental sample, for G personality factor (weak superego versus strong superego) are significantly lower in post-test (after their participation in psychodrama group activities) than in pre-test (before their participation in personal development group). This is the only significant difference found between the pre-test and post-test scores of adolescents in the experimental sample for the 16 personality factors of Cattell's questionnaire.

Confirmation of specific hypotheses 1 and 4 and 7 resulting in the refutation of general hypothesis 1: "If adolescents participate in the activities of a psychodrama group for personal development, then decrease their anxiety level."

In other words, while participating in group psychodrama has been a downward trend in the level of general anxiety of adolescents in the experimental sample, this decrease was not found to be significant.

Confirmation of specific hypotheses 2 and 5 and 8 resulting in the refutation of general hypothesis 2: "If adolescents participate in the activities of a psychodrama group for personal development, then increased their empathy."

For adolescents who were members of psychodrama group for personal development, I found a trend of increased their scores for scales of empathic concern

and perspective taking, but this increase was not significant. I also found a decrease in average score of imagination and personal distress scales, but this decrease was insignificant.

Confirmation of specific hypotheses 3 and 6 and partial confirmation of specific hypothesis 9 confirm partial the general hypothesis 3: "If adolescents participate in the activities of a psychodrama group for personal development will occur changes in their personality traits." I found a significant decrease in scores of teenagers, for the G personality factor (weak superego versus strong superego), as a result of their participation in psychodrama group for personal development. We can say therefore that the only significant change in the personality traits for adolescents in the experimental sample consisted in a greater willingness to accept that there are relatively many situations when they show a lack of consciousness, that sometimes avoid taking the necessary responsibilities, that may be inconsistent and capricious, relatively intolerant to frustration and do not always follow the rules and social manners.

Experience to produce the most significant change in psychodrama is playing the role of protagonist. By its nature, psychodrama group for personal development activities was centered successively on one member of the group so that members could be no more than once protagonists. When significant self-disclosure were made, they were not followed by the desire to explore the conflicts and difficulties involved on the psychodrama stage, most likely due to resistance, the members fear to be ridiculous, to lose a certain status in the group, to disclose weaknesses and to look vulnerable. My freedom for using a variety of techniques of psychodrama in very different contexts, was more restricted by the group members reduced propensity to engage in role-plays. Only at the tenth meeting of the group, taking advantage of a reduced presence of its members, I have had on the psychodrama stage three protagonists who engaged in exploring their inner conflicts, with the empty chair technique. Results showed that the simple self-disclosure of psychodrama group members do not produces change, unless it is accompanied by the desire to put on stage situations that illustrate the nature of intrapersonal or interpersonal difficulties.

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## PSYCHOLINGUISTICS AND LANGUAGE PROCESSING

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**ABSTRACT.** The aim of this article is to trace the evolution of the most important theoretical and experimental approaches to language processing, from the early 1960s, which witnessed the emergence of psycholinguistics as a separate field of study, to the more advanced methods constituting the methodological infrastructure of current research in the field. Combining two disciplines, namely psychology and linguistics, *psycholinguistics* originally attempted to identify the ways in which lexical items and syntactic rules are stored in the mind, as well as the role played by memory in the process of discourse perception and text interpretation. More recently, however, the interest has expanded not only towards issues pertaining to discourse processing, but also towards the manner in which readers' schemata based on background knowledge and readers' inferences about a text may help them create mental representations of the narrative world.

**Keywords:** *cognitive processes, internalised grammar, word recognition, working memory, sentence processing, text interpretation.*

**ZUSAMMENFASSUNG.** Ziel dieses Artikels ist es, die Entwicklung der wichtigsten theoretischen und experimentellen Ansätze zur Sprachverarbeitung, aus den frühen 1960er zu verfolgen, von der Entstehung der Psycholinguistik als eigenes Studienfach bis zu den weiter fortgeschrittenen Methoden, die die methodische Infrastruktur auf dem Gebiet aktueller Forschung bilden. Durch die Kombination von zwei Disziplinen, nämlich Psychologie und Linguistik, versuchte Psycholinguistik ursprünglich die Wege, auf denen die lexikalischen Einheiten und syntaktischen Regeln im Kopf gespeichert sind, sowie die Rolle, das Gedächtnis im Prozess der Wahrnehmung und der Diskurs Textinterpretation spielt, zu identifizieren. Neulich hat sich jedoch das Interesse nicht nur auf Fragen der Diskurs Verarbeitung, sondern auch gegenüber der Art und Weise, in der die Leser Schemata basierend auf Hintergrundwissen und Leser Rückschlüsse auf einem Text ihnen helfen mentale Repräsentationen der Erzählung auszubauen.

**Schlüsselwörter:** *kognitive Prozesse, internalisierte Grammatik, Worterkennung, Arbeitsgedächtnis, Satzverarbeitung, Textinterpretation.*

An essential part of understanding a language consists in constructing or identifying the appropriate syntactic structure for each utterance or sentence created or perceived. Sentence processing is an automatic, fast and apparently effortless cognitive

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process, but it is also a process extremely difficult to study directly. Moreover, any theory of sentence comprehension and production based exclusively on linguistic theories is doomed to failure. Noam Chomsky's realisation that the special properties of language require special processing mechanisms contributed to the emergence of psycholinguistics as a separate field of study in the early 1960s. But, as Garrett (2007: 805) explains, psycholinguistics "did not spring full born from a bed of behaviourism in 1960". Combining two disciplines, namely psychology and linguistics, this new field of scientific inquiry originally attempted to identify the ways in which lexical items and syntactic rules are stored in the mind, as well as the role played by memory in the process of discourse perception and text interpretation. More recently, however, the interest has expanded not only towards issues pertaining to discourse processing, but also towards the manner in which readers' schemata based on background knowledge and readers' inferences about a text may help them create mental representations of the narrative world.

In his *Reflections on Language*, Chomsky (1976: 139) argues that the speedy development in the case of language acquisition must be aided by the existence of an "**initial** state of the mind" which, following processes of maturation under the influence of the environment, turns into a "**steady** state of the mind" characterised by two important elements: (1) a system of expectations and beliefs regarding the behaviour and the nature of objects, and (2) a system of language. Chomsky (1976: 144) adds that what people usually label as 'knowledge of a language' is, actually, one of the cognitive components of this "steady state", namely an internalised grammar of the generative transformational type that derives the sentences' surface structures from the deep structures called initial phrase markers. This grammar comprises a set of rules governed by general principles that guide the interpretation of both the initial phrase markers and the surface structures (Chomsky, 1976: 150). Since the language users' internalised grammar has the form of generative rule systems which, despite being finite, have an infinite output and are, thus, able to account for linguistic creativity as well, psycholinguists and cognitive psychologists aiming to solve the puzzle of sentence processing must not only **describe the intrinsic competence** of the language users, be they speakers, listeners, readers or writers, but also **provide an explicit analysis of their contribution**.

As early as 1965, in his *Methodological Preliminaries*, relying on Humboldt's theory of language as based on a system of rules able to determine the way in which users can both generate and interpret an infinitude of sentences, Chomsky attempted to draw attention to the concept of "underlying competence as a system of generative processes" (Chomsky, 1965: 4). Arguing against the idea that word order merely mirrors the so-called *natural order of thoughts*, Chomsky stated that only a grammar of the generative type can own the proper tools required for explicitly assigning structural descriptions to sentences, for accurately describing the language users' intrinsic linguistic competence, as well as their contribution during the process of linguistic performance. The goal is to identify what the users are actually able to do

with the language, not simply what they might report about their linguistic knowledge, because the mere fact that a speaker “has mastered and internalised a generative grammar” means neither that he is aware of the rules of this grammar, nor that he can be made aware of them, so “his statements about his intuitive knowledge of the language” may not be accurate (Chomsky, 1965: 8). To paraphrase Leibniz’s words on thoughts and ideas, words that perfectly apply to linguistic knowledge as well, we can say that there are innate general principles that form the soul and the connection of our thoughts; “they are as necessary thereto as the muscles and sinews are for walking, although we do not at all think of them”. When we use language we constantly lean upon these innate principles, but it is extremely difficult “to distinguish them and to represent them distinctly and separately”; consequently, “one possesses many things **without knowing it**” (emphasis ours).

These final words offer an essential insight into the correct understanding of Chomsky’s notion of internalised grammar, especially since most of the attacks directed against the renowned linguist’s generative-transformational theory were grounded in his interchangeable use of the terms ‘knowledge of grammar’ and ‘internalised grammar’. This constituted, for some critics, a serious terminological problem, since the two terms are not synonymous and, therefore, should not be employed as if they were in free variation. According to Stich, for instance, Chomsky’s assertion that generative grammar can account for the language users’ internalised knowledge is unsubstantiated: “My own view is that the notion of competence is explanatorily vacuous and that attributing knowledge of grammar to a speaker is little more plausible than attributing knowledge of the laws of physics to a projectile whose behaviour they predict.” (Stich, 1972, quoted in Katz 1985: 143). On the one hand, since *knowledge* is synonymous with *awareness*, *understanding*, and *familiarity*, being defined as “the psychological result of perception and learning and reasoning” (WordNet 3.0), the term obviously refers to something we *acknowledge* and are *conscious of*. It is undoubtedly true that, just like a projectile is unaware of the laws of physics, so a speaker is not aware of grammar rules. However, it is not absurd to state that language users are endowed with an ‘internalised grammar’, which is not learned but innate, nor is it absurd to claim that the laws of physics are part and parcel of the design procedure employed in the construction of the projectile. Thus, we might say that due to the existence of this ‘internalised grammar’ the speaker is able to acquire and process language, just like the projectile is able to reach its target due to the existence of the laws of physics on the basis of which it was designed. Consequently, “[k]nowledge of the laws of physics is not necessary for the projectile to reach its target – and from this we cannot conclude that the laws of physics do not exist –, as knowledge of a grammar is not necessary for the speaker to understand and produce grammatically correct sentences – and this does not mean that there is no such thing as an ‘internalised grammar’.” (Preda, 1999: 142). Furthermore, it is precisely these laws that enable the projectile to function and to reach its target, just as it is the ‘internalised grammar’ that enables humans to acquire and to process language.



Fodor (1981, in Katz 1985: 154) points out that both in the case of ‘competence theories’ and in that of ‘performance theories’ there is a psychological element involved. The former account for “facts about the behaviours and capacities of a speaker/hearer by reference to *properties of his internalized grammar*”, while the latter account for “facts about the behaviours and capacities of a speaker/hearer by reference to *interactions between the internally represented grammar and other aspects of the speaker/hearer’s psychology*” (emphasis ours). Chomsky and Miller (1963: 269-361) explained that theories of linguistic competence described the knowledge that a language user could access during processing, whereas theories of linguistic performance had to take into account the way in which the limits of the cognitive system could guide to systematic patterns in performance. Using these theories as a starting point, a few psycholinguistic theories explain the phenomena involved in the human processing of language by resorting to working memory.

Canice Grant (2005: 26-27) begins her analysis of sentence processing by referring to a quote from Searfoss, Readence and Mallette’s book entitled *Helping Children Learn to Read*: “The basic task of readers is similar to the task of a prospector. Just as the prospector picks away at the surface to discover the gold hidden underneath, readers dig away at the surface structure, searching for and demanding meaning.” Grant points out that this analogy is justified by the existence of theories that draw on the process of “subconsciously picking away at a sentence” in order to gain access to its meaning. Since sentences are used as part of communicative activities, sentence processing is meant to foster sentence comprehension, which requires more than just lexical processing, as the meanings of words and phrases are interwoven into the fabric of the text. Thus, it has been argued that listeners and readers rely, at first, on word recognition and, then, must interpret the respective word meanings function of the context in which they were used. Given the fact that sentences are often ambiguous in isolation, it is not only the linguistic context that needs to be taken into account, but the situational and the social context as well. Judith Greene (1995: 21) shows that even the interpretation of a very common utterance, such as *He gave her a ring* may vary significantly, depending on the situational and on the linguistic context. Thus, the sentence means one thing if preceded by *Daniel begged Jane to marry him* and quite another if it appears following *Daniel needed to speak with Jane*.

Moreover, *conversational conventions* play an essential role in achieving the desired goal of communication, as do *performative constructions*, which belong to the realm of pragmatic analysis. Thus, an interrogative structure such as *Will you turn the lights on?*, a statement like *It is rather dark in here.*, an imperative construction like *Turn the lights on!* and a tag question such as *It’s getting dark, isn’t it?* may all be used to perform the speech act of requesting that the lights be switched on. However, in order for the action to be carried out by the addressee, he or she must be cognizant of the social context conventions at work in our society and able to perceive the speaker’s intentions.

Greene (1995: 21-23) explains that the interpretation of the words “THE POLICE LIVE AT THE ALBERT HALL” (featuring on a poster) relies heavily upon the reader’s background knowledge. Choosing correctly between the two possible scenarios (namely, on the one hand, that a famous pop music group is going to deliver a live performance at the Albert Hall and, on the other hand, that “members of the constabulary inhabit that vast building”) is **not** just a matter of linguistic knowledge. Therefore, cognitive theories of language are needed to account for the relationship between “purely linguistic knowledge of a language and general knowledge about the world” and to describe exactly how these different kinds of knowledge are represented in memory. Consequently, psycholinguists and cognitive psychologists have the challenging task of establishing not only whether our knowledge of grammar rules is represented as “a special syntactic component in memory” but also how our understanding of social conventions is organised “so as to constrain our utterances to make sense.”

To understand a sentence, listeners and readers have to retain a large amount of information, covering the words they encounter, the order in which they appear, their syntactic category, the relations among them, etc. Not only the role, but also the limitations of working memory powers are probably best evinced by the processing of embedded structures such as the following sentence, for instance: **The rat the cat the dog hated chased fell into the trap.** In this case, the string of words could be more explicitly uttered by making use of relative pronouns as introductory words for the defining relative clauses:

The rat *that the cat which the dog hated chased* fell into the trap.

Although they are grammatical, complex embedded structures are often ambiguous and, thus, highly challenging for the human processor, if not almost impossible to understand at first. It is only natural for processing time to lengthen in the case of complex structures, and, according to specialists in psycholinguistics, if comprehension fails in cases such as the one mentioned above, this occurs because each of the initial noun phrases must be held in working memory until the location of its appropriate predicate is detected, but more than two such noun phrases usually exceed the capacity of most people’s working memory.

Both the assumptions of the researchers and the research methodology have undergone important changes since the 1960s, especially in what concerns the importance awarded to the role of the brain’s structure and functions in language processing. Garrett (2007: 807) points out that, besides the competence-performance issues, some other significant shift in perspective have marked the first twenty years of psycholinguistic research: if Fodor et. al. (1974) focused on the relation between grammar and the processing of language, Clark and Clark (1977), as well as Foss and Hakes (1978), gave less prominence to the grammatical aspects. However, all three works featured issues such as language development, word recognition, speech processing and parsing. More recent works also include essential aspects

concerning production processes, language pathology, neuroscientific insights, bilingualism and computational modelling.

In the area of lexical processing, the interest centred on ambiguity and its resolution on the basis of contextual constraints, as well as on semantic priming and the workings of memory systems. The investigation of the mental lexicon, for instance, centred on form-driven versus meaning-driven theories, with William Marslen Wilson's "cohort theory" attempting to take into account the role of contextual clues as well. The focus of more recent psycholinguistic research shifted to the role of conceptual and memory systems, a distinction being made between the representation of form-related information and that of meaning-related information (with not only semantic, but also pragmatic overtones). One of the most acute issues in contemporary psycholinguistics is whether "there is a principled difference between the linguistic lexicon and the general memory systems that record experience with words" (Garrett in Gaskell, 2007: 808).

As far as the investigation of parsing is concerned, there has been a significant evolution from early 1960s research, characterised by a "static structural focus", to more recent approaches acknowledging the essential issue of "real-time" or "on-line" sentence processing (Garrett in Gaskell, 2007: 810). Fodor's 1983 analysis of modularity, William Marslen-Wilson and Lorraine Tyler's 1982 experimental approaches to on-line processing, especially in the case of utterances displaying lexical and/or structural ambiguity, were accompanied by research based on computational linguistics, with a focus on syntactic ambiguity, and with a special interest in temporary syntactic ambiguity (particularly the so-called "garden-path phenomena"). As Garrett (2007: 810) explains, although reaching a consensus on the convoluted issue of ambiguity resolution was impossible due to the "intrinsic variability in human performance", this was one of the most prolific periods in the study of language. What followed was an expansion of investigation techniques which, at the end of the 1980s and the beginning of the 1990s, relied on electrophysiology and eye-movement monitoring techniques, later improved by free-field eye-pointing assessments and brain imagery testing. Nevertheless, shows Garrett (2007: 811), the above mentioned methods of observation "in concert with more traditional behavioural measures, widened the empirical stream without much deepening it".

Still, all these different types of investigation have not been carried out in vain, because as a result of the various theoretical excursions and practical experiments there sprang some significant evidence regarding

- the remarkable swiftness that characterises the process of combining various bits of information during speech processing,
- the time-related and memory-related constraints on information processing,
- the existence of specialised linguistic sub-systems,
- the use of different computational systems for the processing of sentence form and, respectively, of sentence meaning, and
- the necessity to integrate comprehension theories with production theories.

Moreover, shows Garrett (2007: 815), although, in time, the global measures of language processing were replaced by more specific methods, able to account for temporal aspects of sentence processing, dual task measures and self-paced reading have survived, in their subsequently improved versions, of course, and have been essential in the development of novel more advanced methods that constitute the methodological infrastructure of current research in the field.

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## CURRICULUM AND TEACHING APPROACHES IN GERMAN PRESCHOOL EDUCATION - DEVELOPMENTS SINCE THE 1970S\*

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**ZUSAMMENFASSUNG.** Vorschulische Deutsche Bildung hat sich in letzter Zeit viel reformiert. Deswegen, versuchen wir die Grundbegriffe zu erläutern, die zur Entwicklung frühpädagogischer didaktischer und curricularer Ansätze seit Ende der 1960er Jahre relevant sind. Uns interessiert, welche Ansätze die Diskussion bestimmen und weshalb sie Aufwind erfuhren, damit wir uns die heutige Situation und Stand des vorschulischen deutschen Systems erklären können.

**Schlüsselwörter:** *Curriculum, Bildungsplan für vorschulische Bildung, Lehrmodelle, Lehrtheorien, Frühkindliche Bildung in Deutschland*

### 1. Problem-setting – Introduction

The idea of *self-education* and *self-construction of knowledge* is the centre of most current early education policies. Behind this approach, there is a picture of the child as a competent actor in his world. The aspects, which are emphasized in the various approaches of self-education, are: the acquisition of the subject's perspective, the connection with the self-activity and the educational support of his own active environment acquisition. The younger the children are, the more play space and occasions should be given to them so that they achieve individual experience.

Grell argues that some classics of early childhood education shorten the educational problem-setting. The question of which content, learning experiences and opportunities for action challenge the plasticity of the young child is excluded (Grell 2010). Frobel, for example, manifests himself for plasticity as *instinctual activity* of the child. Frobels education concept of the kindergarten focuses on the idea, that the creating exploring activity can be encouraged by educationally developed game activities and resources which permit activity and challenge culturally, in order to provide life skills, aesthetic and mathematical experiences. The Frobel

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game activities are to be described in the sense that “adults select the objects, which he offers to the child for this *instinctual activity*” (Grell 2010, p.160).

The issue of *selection* of options allocated to children implies the urgent, plural and heterogeneous experience of all the stocks of knowledge and horizons of meaning and interpretation of action in social modernization process.

In sociology, the term *Individualisation* the increase of choices and sense opportunities for shaping your own life. This corresponds with the *Differentiation* of society into different sections, each with its own logic, knowledge stocks and discourses. It must also be decided which contents, themes, and knowledge from the pluralistic cultural funds are particularly suitable to encourage self-educational potential of children appropriately. *The combination of content and topics on the one hand and (self-)education potential on the other hand is the common initial question of teaching, curriculum and curriculum theory.* So, a broader perspective than in the psychology of learning is given, which does not emphasize the plasticity (as a philosophical category), but underlines education ability alone (as an empirical-psychological dimension). In this respect the following presentation offers a perspective that is meant to provoke the psychologically oriented listeners a strangeness experience.

This learning sequence includes a dual purpose. First we want to - systematically - explain and delimit the terms of teaching and curriculum in general educational perspective. Secondly, we want to reconstruct - historically - the development of central curricular and teaching strategies of elementary education in their historical-become since the 1970s. At this point we are even facing the problem of pluralism. Therefore we try to select approaches that can be considered typical for the early development of pedagogical theory.

## **2. Definitions**

### **2.1 What is teaching?**

Systematic analyzes of the teaching concept are in early education rare. Educational theories and models, however, are an integral part of teacher education. Trained as teachers, we were so surprised at first, even slightly surprised when we found out how heterogeneous the concept of teaching is still used in early education. There is for example "Social Teaching" or teaching as "educational attitude", as "teaching methods science", as "design of interaction processes" or "structured planning" (Schelle, 2010, p. 5ff). General educational theories are perceived only weak, probably because they are put on the same side with school teaching and apply as a counterpoint to holistic learning in kindergarten. Such an equation will not meet the general demand of general didactics to provide educational guidance for the various educational fields of activity and occupations (Wigger, 2004). Below we therefore try to outline the field of general didactics, to illustrate the basic issues and basic dimensions of educational thinking.

### ***2.1.1 Historical development***

In the 17th Century was teaching an art. Comenius defined teaching as an „art, to teach all things to all” and that “quickly and thoroughly enjoyable.”

In the 18th and 19th Century teaching was understood as a doctrine that is separate from the theory of education. So, two aspects are already clear: if we look at teaching as an art, then the repertoire of action and the leadership skills of teachers are considered important; looking at teaching as theory, the arrangement of the content and structure of teaching is considered relevant.

Particularly influential in the primary school sector were the didactics Herbart and the resulting lessons teaching by the Herbartians. Herbart developed psychologically based levels of education. The arranging of all themes and topics would have to come from the appropriation process of the student, which takes place at certain cognitive stages and teaching levels (clarity, association, system building and methods using).

In the 20th Century developed a third understanding of teaching. Now teaching was seen as a scientific reflection. So, teaching is seen as a branch of education, that focuses on the condition of teaching and learning moments. Henceforth, we distinguish between general multidisciplinary teaching, subject teaching (Mathematics, Geography etc.), department of teaching (eg. Reading education), the levels of teaching (eg. Primary Education) and type of school teaching (eg. Secondary school teaching) (Köck, 1997, Wigger, 2004).

### ***2.1.2 Object of teaching***

The various definitions of teaching differ in their concept covering. Kron distinguishes between the following term acceptations, which advance from a wide to a narrower concept covering.

What is teaching? (Kron, 1993, p. 43)

1. *Teaching is the science of instruction and learning.*
2. *Teaching is theory or science of instruction.*
3. *Teaching is theory of educational contents.*
4. *Teaching is theory of control of learning process.*
5. *Teaching is the use of psychological instruction and learning processes.*

In the following, we refer to the most comprehensive definition of teaching as a *theory or science of instruction and learning*. Here, it is very clear, that teaching involves more than school and instruction, it involves all areas *which imply any manner of instruction and learning as well as all forms of instruction and learning and all forms which are used in this processes* (Kron 1993, p.43).

Even in the etymological derivation from the Greek verb *didakein* there is a double meaning of teaching: on one hand as instruction/learning and on the other hand as to be taught/to learn. So teaching aims always the mediation between a



learner and a learning object. More precisely: mediation between the material structure of the content and the psychological prerequisites of the learners. The task of teaching, therefore, is to mediate between the thematic contexts and the conditions for learning and motivation structures of learners. The teaching triangle is a basic model, that visualizes the reciprocal relationship between teachers, learners and learning object.

### ***2.1.3 Teaching basic questions***

The exchange relationship between teacher, learner and content can be further differentiated and this leads to fundamental questions in the field of teaching (planning and performing) (Martin 2006).

Teaching basic questions:

- Which learning objectives should be pursued?
- Which educational content should be taught?
- Methods: How should be taught and learned?
- Relationship: How cooperate teachers and learners?
- On which anthropological and socio-cultural conditions is the learning process based?

### ***2.1.4 Teaching theories and models***

General educational theories and models differ in the position in the triangle and in the teaching questions, which are in the center of reflection in every situation. We give below an overview of the main approaches that are often mentioned in educational theories and models (Terhart 2008).

#### *Theoretical teaching theory*

Briefly said this teaching theory approach sets the question of the contents, which are worthy to be taught and learned. To answer this question selection criteria for educational content are developed. As a way to meet the educational content, the methodology has a subordinate, supporting role (gr. Methodos = path).

Education is in the theoretica teaching theory classically conceived as an encounter between selected, appropriate educational materials and the rising generation. Theoretical teaching makes the distinction between material, formal and categorical education.

Material educational theories define education from the content and its objective meaning. Asked is, for example, which educational content classical, exemplary and fundamental is. A task of this educational theory is about putting together a reading canon.

Formal education theories define education starting from the subject. Asked is, which facilities, forces and potentials that could be relevant to the learners in the present and future, should be encouraged. No objective value is attributed to the educational content, rather, this serve as mean and objective.

The Klafki's idea of categorical education aims to overcome the one-sided material and formal educational theories through their dialectical interconnection. "Education is categorical form in the double sense that people 'have opened up, and that they are doing it themselves - thanks to the self-completed, categorical perspectives, experiences of reality" (Klafki 1963).

"If we respect the culture and spirit" of the educational stimulation of the child's self-education, every general education will be "in the centre", inevitable as an educational theory (Terhart 2008, p. 17).

### *Teaching theory based on learning*

In contrast to theoretical teaching theory, this one takes into account several aspects of the didactic triangle. It is based less on normative theory of education, but more on the ideal of value-free empirical science and is therefore close to today's empirical teaching and learning and teaching research. The educational content will become a concrete form through the operationalisation process of learning objectives, so that the intended learning progress is observable and verifiable. The methodological and media package will be upgraded and used the purposive-rational and performance-control of learning outcomes.

A prominent example of this theory is the concept of the structural analysis of teaching of Paul Heinemann. Accordingly, a teacher is in certain condition fields when he wants to stimulate learning. These are, firstly, the socio-cultural and anthropological learning requirements of the members of the study group and secondly the curriculum guidelines. Based on this background, "a teacher has to make decisions regarding the four factors: objectives, contents, methods and media (decision areas). The ... so constructed and conducted lessons generate effects that must be verifiable and be remembered as conditions in the future planning" (Terhart 2008, p.17). The condition fields and the decision fields form the structure of the teaching moments.

### *Teaching based on communication and interaction*

We would like to mention just briefly the approaches based on communication and interaction. These focus on the relationship side of learning, grew out of critical pedagogy and are based on the ideal of power-free, symmetric pedagogical communication. They aim on the development of communicative competence.

### *Constructivist teaching and teaching based on neurosciences*

We would also like to nominate newer approaches such as constructivist teaching and teaching based on neurosciences. These approaches are dominated by the so-called new learning culture, which is explicitly focused on the learning subject. Based on the theory that all knowledge is constructed, teaching is 'in the traditional understanding impossible. The enabling of self-directed learning and

self-development processes are in the centre. In neurosciences findings "regarding the functioning, performance, characteristics and limitations of the human brain are used to underlie a brain-specific learning" (Terhart 2008, p.25).

Strictly speaking, it can therefore be neither constructivist nor neurosciences accepted because the material side of learning as well as methods of teaching are not only excluded, but even deconstructed. The statements of neuroscience are still too general to derive new consequences for the teaching action. Educational principles known as the learning connection are newly re-established.

### *What is a curriculum?*

Closely linked to the concept of teaching are the concepts *curriculum* and *education plan*. All address to the issue of selection of relevant education content and/or objectives. While teaching takes the micro-level of the design of instruction and learning processes in view, education plans and curricula are based on the macro-level of the education control system. These documents are, as Fend shows, the "content master plans", the "core of the macro planning of education system" (Fend, 2008, p.40). In ordinary language, the terms curriculum and education plan, but also canon and education plan, are often equated. In scientific space there are some differences to observe, as the definition of curriculum by Dörpinghaus, Helmer and Herchert shows:

"The concept of the curriculum identifies canonized, most diversified forms of selection and sequence of learning contents, so is it separated from certain terms such as education plan and curriculum" (Dörpinghaus, Helmer, Herchert 2004, p.565). Curricula aimed at the transformation of the culture of a society considered to be valuable in an educational program. "The curricula embody the effort to a common denominator, what an advanced civilization for its core holds" (Fend, 2008, p.40).

The culture is valuable in itself, but it doesn't form itself alone. It is a construct, a result of negotiation processes of various social groups such as churches, business, parties. The result of these negotiations will be the curriculum, that the political system established by law. With the increasing diversity of the modern, election process is more difficult. One of the last designs of curriculum was set by the educator and philosopher Flitner in the 1950s, for the high school. His starting point is the question about the traditions of the culture, which could have prevented the Second World War. Flitner saw the nucleus of western civilization according to the personal principle, "so in the various ways of thinking, which made the people to formulate the centre of thought and responsibility, universal rights and obligations" (ibid, p.48).

The path of development in the western tradition of the personal principle from Greek philosophy up to the Enlightenment is for Flitner the fundamental design principle for the high school canon to be formulated. In this design principle the following is clear: education plans have a subjective significance of life - they focus on the subjective appropriation and transformation of cultural tradition - and they have an objective cultural significance - the passing on of cultural heritage.

You've probably already realized, that the idea of the organization of educational content in education plans corresponds to the macro level of the education control system and the micro level of teaching and learning to the education theory of teaching.

Due to the pluralism problems, appeared in the 1960s a whole new discussion. The question about the objectives and content of education and teaching has been discussed between 1967 and the '80s in the most part under the heading term of *curriculum*.

This term known since Baroque, was in German-speaking countries forgotten and was re-imported in those years from the Anglo-Saxon world. Why? 'Curriculum' a fundamental innovation that should be marked as turning away from the traditional education plan development is? About this we would like to underline three aspects:

1. 'Curriculum' means not only the organization of educational content, but the whole of the educational institution in a targeted and responsible learning processes and their evaluation. It is not only limited to the page of program, but also makes statements on the implementation of learning. In this sense, the comprehensive education plan defined in 1973: "Under Curriculum is a system for the enforcement of learning processes in relation to defined learning objectives understood and operationalized. It includes learning objectives, content, methods, conditions, and evaluations. "

2. Curriculum development is a break of the idea of the cultural tradition. The past-related orientation of classical education plans should be overcome by the view to current and expected future life requirements. This involves a functional-pragmatic, oriented to understanding and applicability education. The question of what qualifications are necessary for coping with life, so what someone needs to live, is the relevant principle of construction of curricula.

3. Curricula should be no compromise of power between different social groups and their performance expectations of the education system, it should be developed with scientific rationality. We have to have in mind the present situation: education planned by the state in a collective way, education seen as a helper of the operationalization and implementation, that was the idea. With the curriculum term these aspects are aimed: right to transparency and rationality of learning objectives, learning content and learning organizational decisions. The problem about the neutral value justification of normative judgments remained unsolved in the scientific theory.

With Fend we can summarize:

"The introduction of the *curriculum* concept represents a new phase of the content and program management in the school. This started not from the cultural traditions that should be represented in the school but from the requirements that the young generation will face in their future. These different starting points separated the theoretical training and the qualification theoretical approaches. Some were oriented in the design on tradition and the ideal images and the others on the pragmatics of coping with life "(Fend, 2008, p.55)

The integration of learning objectives, methods and media level reveals a close relationship between curriculum discussion and the teaching theory based on learning.

### 3. Education plans: Revival of early educational planning in the last decade

In the 1980s, the interest in curricular and pedagogical approaches decreased. In the 1990s, educational reform approaches were deconstructed by motivated groups within the early childhood education in the post-modern time. For the last 10 years the idea of teaching and curricular planning of educational processes is, however with new power in the early educational discourse back.

It should be noted, however, that the discussion on increased curricular planning of educational processes already in the 1990s with the studies on quality of German kindergarten begins. It condenses in the wake of the recommendations of the Forum Education (2001) and the OECD report *Starting Strong* '(2004). The expert groups criticize among other things the traditional educational deregulation of early childhood education sector in Germany.

Recommended is the strength formalization of preschool learning in a clear educational mission and curriculum of kindergarten (see Wustmann 2009, p.326). Finally, the result of the international publications assessment studies contributed importantly to the promotion of discussion about early education curricula (Fthenakis 2003).

In comparison to the education debate of the 1970s is today's fundamental educational debate in the *implementation of education plans* in all provinces. Thus, there is another concept to be discussed. Education plans are a key instrument for politically control. Education plans fix the areas of education and skills to be promoted. With the introduction of educational plans follows a universalization of political responsibility for the areas and objectives of early childhood education processes. Diskowski sees a radical change that he describes, given the traditionally conservative governance as a "departure from the vagueness" (Diskowski 2008, p.157).

The term *education plan* is to be delimited in strict technical systematic language from the curriculum and the teaching plan. Unlike curricula, education plans present no relationship between decisions regarding objectives, content, organization and evaluation of learning. Unlike curricula, they also do not present material collections. They rather name educational areas and skills to be followed, without didactic and methodological statements. Thus for kindergarten, it gives the freedom to implement the education plans depending on the local present situation.

A large consistency exists between the curricula of individual states in the core content areas and in the understanding of education as a self-development into active engagement with the social and physical environments. There are differences in the extent of the liability, the age range and in the teaching orientation. Teaching allows two major trends, "on the one hand a more instructive approach, which is found for example in the Bavarian educational plan and on the other hand a more open educational approach, which assume the self-education process of children" (Wustmann 2009, p.329).

Since we assume that everyone is familiar with the areas of education plans, we will confine ourselves to finally draw attention to a contradiction in many plans. This contradiction is that the post-modern image of the child is placed in many

education plans on an anthropological basis to provide a picture, "that does not even want to fit the process of planning and its implications" (Konrad, 2009, p.8). On one hand, from educational philosophical perspective, holism and self-activity are accentuated as features of early childhood education and the child is described as a small, researcher, discoverer and inventor and, on the other hand, desired levels of education and skills targets are set in analogy to school education.

This contradiction is thus constituted as in the commentaries and plans in the educational debate often between self-education and curricular and systematic learning polarized is. Teaching, but this is an abbreviated view of the problem, but if it was aimed at teaching as the mediation between the child's psychological conditions and external demands, it would be the property, structures of any content or social skills expectations. Exactly this balance between educational learning aid and the self-referential world appropriation competent children should be placed in the centre of teaching model developments in early education.

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